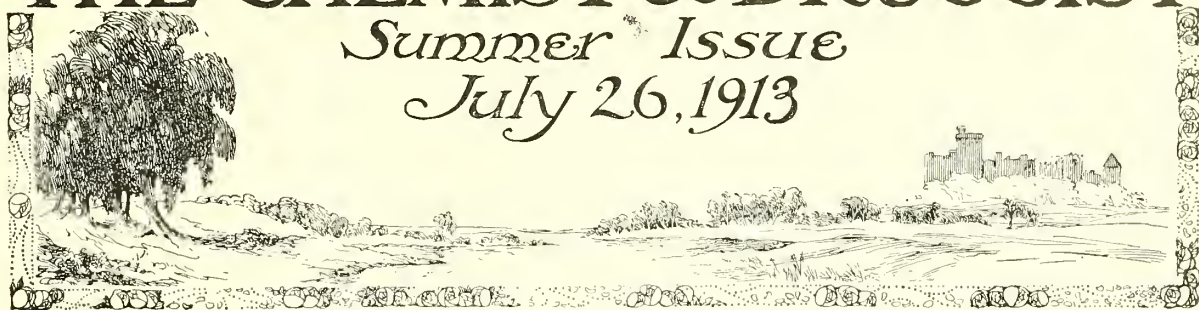


THE CHEMIST & DRUGGIST

Summer Issue
July 26, 1913



A Weekly Journal of Pharmacy and the Drug and Chemical Trades.
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THE KNOWLEDGE NECESSARY

to success in all businesses is yearly becoming more searching and thorough. The old "rule-of-thumb" days have long since gone, and now it is imperative that anyone desiring to enter pharmacy, medicine, dentistry, veterinary surgery, chemical science, or optics should have a thorough training in theory as well as practice. Full particulars of the facilities for acquiring this information, the data for the examinations, and other useful matter of this kind will appear in the

EDUCATIONAL NUMBER

of

THE CHEMIST AND DRUGGIST,

to be published on August 16. THE CHEMIST AND DRUGGIST was the first journal to produce an Educational Number especially for chemists, and the information given is the most complete and comprehensive. The publication of such an issue gives special scope to educational institutions of all kinds to advertise their courses. It is likewise most appropriate for special publicity in connection with the sale of text-books, scientific apparatus, educational and hospital supplies, laboratory chemicals, and therapeutic products.

SUMMARY.

The more notable items only are dealt with.

The Cape Government propose to conserve the buchu industry, and have issued stringent regulations embodied in a draft Ordinance (p. 194).

Our obituary columns contain notices of the deaths of Mr. David Anthony, of Cardiff, and Mr. George Houghton, of the well-known Holborn photographic warehouse (p. 107).

Our correspondence pages are in the front part of the paper this week, because the issue is an exceptionally large one. Letters and numerous answers to correspondents, with formulæ, will be found on pp. 130-2.

Mr. Glyn-Jones and Dr. Addison have introduced amendments to the Insurance Bill, one of which is intended to establish Local Pharmaceutical Committees equal in powers to the Medical Committees (pp. 116 and 127).

Mr. Francis Sutton, of Norwich, is the oldest member of the British Pharmaceutical Conference, and the only survivor of those who founded it at Newcastle in September 1863. An appreciative article regarding him is on p. 152.

We give an account of the history of thirty-three out of fifty wholesale druggists and chemical houses that were in London when the British Pharmaceutical Conference was established in 1863 and still survive. The article begins on p. 143.

Two important decisions under the Shops Act are reported. In one the delivery of handbills by shop assistants is not considered to be work "about a shop," and in the other company chemists have been fined for infringing the West Ham Chemists' Closing Order by selling vaseline during closing hours (p. 105).

The news items given in the pages that follow are what we received up to Wednesday evening, when the issue closed for press, but we propose to insert in the Coloured Supplement on Thursday important items that are received then. The Supplement will also include a report of the drug-auctions held on Thursday.

Numerous changes have taken place in the markets, with some improvement in business. An official advance has been made in quinine. Atropine, citrates, opium, and shellac are dearer. Insect-flowers, star-anise oil, stavesacre, and turpentine are firmer. Among the easier products are lemon oil, quicksilver (seconds), quillaia, and arsenic (p. 193).

The Jubilee meeting of the British Pharmaceutical Conference has been held in London this week, and is fully reported in this issue. Mr. John C. Umney, the President, confined his Address to a demand for equal recognition of pharmacists and medical men in the revision of the British Pharmacopoeia, and suggested that this should be done through a Bill in Parliament, of which he submitted the text of the draft. This begins on p. 156, while the report of the sessions of the Conference begins on p. 166. The lighter side of the Conference is reported in the section beginning on p. 108.

ENGLISH AND WELSH NEWS.

When sending newspapers to the Editor please mark the iter of news to which you desire to call his attention.

Brevities.

Mr. W. E. Robinson has retired from the post of dispenser at the Surrey County Asylum at Brookwood after thirty-four years' service.

The forty-eighth annual conference of the National Medical Association of Herbalists was held at Manchester, beginning on July 16.

The Local Government Board has sanctioned an increase in the salary of Mr. Wm. J. Clarke, dispenser at the Camberwell Infirmary, to 140*l.* a year (*C. & D.*, July 5, index folio 3).

On July 14 a horse backed a cart into the window of the pharmacy of Mr. P. Davy, chemist and druggist, 30 High Street, Rotherham, shattering it and doing damage estimated at 10*l.*

Mr. J. T. Knowles, chemist, of Irington, has won the "Answers" 500*l.* prize in a "Simplets" competition. Mr. Knowles' effort was as follows: Example, "Mother's Holidays"; Simplet, "Match Ireland's Snakes."

The Herts County Council has issued poison-licences to J. Young & Co., Lower Road, Chorleywood, and (employe's licence) to S. W. Roe, c/o the Hertford Hardware Co., Hertford. Eleven licences were renewed.

A draft closing order for chemists in the area of the Clown Rural District Council was issued on July 16. The hours scheduled are: Mondays, 7.30 p.m.; Tuesdays and Thursdays, 7 p.m.; Wednesdays, 1 p.m.; Fridays, 9.30 p.m.; and Saturdays, 10.30 p.m.

The Bridgwater Town Council have granted a poison-licence to Messrs. Thompson Bros., ironmongers, of that town. The application was opposed on the ground that adequate facilities for the purchase of poisonous substances already existed, but the licence was granted by eight votes to six.

Sale of Food and Drugs Acts.

In Lambeth recently four informal samples were analysed and found genuine.

In Southwark last quarter 234 samples were analysed under the Sale of Food and Drugs Acts, but none of these were drugs.

One sample each of cod-liver oil and saffron were examined in the borough of Poplar during the past quarter. Both were genuine.

The Greenwich analyst (Mr. A. E. Brown, B.Sc., F.I.C.) examined last year 422 samples of food and drugs. All the drug samples (47) were genuine.

Contracts.

Golborne Urban Council.—The Sanitary Dry Lime Co. for disinfecting-powder.

Metropolitan Asylums Board.—Ingram & Sons, for a bulk supply of waterproof sheeting; approximate value, 590*l.*

Brentford District Council.—Mr. C. Humble, Brentford, for one cask of Izal disinfectant fluid at 3*s.* 8*d.* per gal. and six doz. bottles of Sanitas at 1*l.*s. per doz.

Islington Guardians.—C. J. Hewlett & Son, for supplies of the following special drugs: Tr. strophanthi (physiologically standardised), tr. digitalis (physiologically standardised), sodn salicyl. (physiologically pure), pil. ext. cannab. indic. gr. $\frac{1}{2}$, compound formalin tablets, and concentrated tinctures (standardised).

London County Council.—The contracts with the British Oxygen Co., Ltd., and Barrett & Elers, Ltd., for the supply of compressed gases, cylinders, fittings, etc., are to be continued for a further period of twelve months, with the option of an extension for another year or two years if found desirable. Gas Light and Coke Co., for a supply of protosulphate of iron; estimated value of the contract, 4,042*l.*

Government Contracts.—*Admiralty*: D. & W. Gibbs, Ltd., for glycerin. *India Office*: R. Graesser, Ruabon, for carbolic acid; Price's Co., Ltd., for turpentine.

Crown Agents for the Colonies: Howards & Sons, for chemicals and quinine; Curling, Wyman & Co. and F. W. Berk & Co., Ltd., for drugs; Baiss Bros. & Stevenson, Ltd., for castor oil; Society of Apothecaries, for ointments.

British Medical Association.

The eighty-first annual meeting of the British Medical Association opened at Brighton on Tuesday. The annual representative meeting was held at the Town Hall, Hove, on Saturday and Monday, when the representatives were occupied with questions arising out of the National Insurance Act and the amending Bill, but the most animated debate occurred on a motion declaring for the principle of a doctors' trade union. After the case for a trade union and that for a voluntary organisation like the British Medical Association had been urged by the two parties, the motion was defeated by more than two to one. In connection with the meeting an exhibition of medical goods is being held, and will be reported in our supplement.

Poplar's Electrolytic Disinfectant.

The annual report for 1912 on the sanitary condition of the Borough of Poplar includes particulars of the use of electrolytic disinfecting-fluid, of which a total of 54,388 gals. was made last year at a cost of 101*l.* 2*s.* 2*d.* for materials. The expenditure in this department amounted for the year ended March 31 to 1,115*l.*, including 266*l.* for removal and reconstruction of electrolyser. The report states that nearly a quarter of a million gallons of the fluid has been made during the past seven years at a cost for electricity and materials of 480*l.*, or less than $\frac{1}{2}$ *d.* per gal. On the other hand, the average expenditure for the six years ended March 31 was 804*l.*, or 77*l.* after deducting 27*l.* average amount derived from the sale of fluid.

Not the Headache-powders.

At the adjourned inquest held at Skewen, Glam., regarding the death of Mrs. Clarke, as reported in the *C. & D.*, June 28, index folio 959, the suspicion that the death was due to headache-powders was removed. Dr. Leonard now stated that the *post-mortem* examination which he made showed that the heart was in a state of fatty degeneration, and the cause of death was cerebral hemorrhage supervening on an old kidney disease. Mr. Edward Powell, the deputy coroner, said it was satisfactory to have all doubt removed, and it was clear that the woman might have died from a stroke at any moment having regard to the advanced state of disease. He repeated that it was satisfactory to have the matter cleared up because rumours got about, and it was not difficult to conceive a person being accused of poisoning, say, ten years hence, in a small township like Skewen. The jury returned a verdict in accordance with the medical evidence.

From Various Courts.

At Eccles Police Court on July 21, Roland E. Maitland was committed to the Sessions on a charge of obtaining 2*l.* 10*s.* from Mr. A. C. Bomford, chemist and druggist, Church Street, Eccles, by means of a worthless cheque.

At Gravesend on July 16, Albert Reyka, of 56 West Wagenstraat, Rotterdam, Holland, was fined 100*l.*, or in default ordered to undergo three months' imprisonment, for being in the possession of 14 lb. of uncustomed saccharin.

At Marlborough Police Court, London, on July 18, Albert William Waddams (20), salesman, was remanded on a charge of embezzling 1*l.* 19*s.* belonging to his employers, Messrs. R. Hovenden & Sons, Ltd., wholesale perfumers, Berners Street, London, W.

At Leicester on July 16, Bertrand Gordon Turner (23) was bound over for six months in connection with a charge of stealing goods, value 2*l.*, from Mr. E. B. Ward, chemist and druggist, of 34 St. Stephen's Road, Leicester (*C. & D.*, July 19, index folio 73).

At Burton-on-Trent last week, Foots Cash Chemists, Ltd., Station Street, Burton, were summoned under the Employment of Children Act, 1903, for employing a boy

under thirteen between 9 P.M. and 6 A.M. on May 17. The inspector stated that the lad deposed to taking, at the request of an assistant, a syphon to the Nursing Institution after 9 P.M. on May 17. He admitted that the manager had told him not to stay after nine o'clock, and that he could have left at that hour on the day in question, but waited for another employé. An apprentice stated that he alone was responsible for the boy taking out the syphon, and the manager was ignorant of the fact. In cross-examination he admitted that the manager was in the shop at the time. The Bench ordered the defendants to pay the costs—14s. 6d.

Society of Chemical Industry.

In connection with the annual meeting of the Society of Chemical Industry in Liverpool, the members on Thursday paid visits to Port Sunlight village and the works of Messrs. Lever Bros., Ltd., and also to the Widnes works of the United Alkali Co., Ltd. Others visited the shipbuilding yard of Messrs. Cammell Laird & Co. at Birkenhead, the brewery of Messrs. R. Cain & Sons, Ltd., the Diamond Match works at Seaforth, or the works of the British Insulated and Helsby Cables, Ltd., at Prescot. In the evening the annual dinner was held at the Adelphi Hotel, the chair being occupied by Professor M. T. Bogert, the President. The toast of "The Society" was honoured, on the proposition of Dr. P. Messel, supported by Dr. Wm. Ramsey; and the President, in reply, remarked that they were all thankful that the Society had gone through another year of successful achievement and usefulness to the community and the profession of chemistry. Sir Benjamin Johnson submitted the toast of "The City of Liverpool," and Mr. Max Muspratt (deputy Lord Mayor), in responding, remarked that so great a part had the chemical industry played in the life of Liverpool that he might say it had cut out the channels of the Mersey port. Sir Alfred Dale also responded, and alluding to the scientific side of university work in the city, said that their one need in the School of Chemistry was not more men but larger laboratories, and if only that night someone could be found to do what Mr. John Hughes had done for engineering, or what Sir William Lever had done for architecture, he would consider the evening not only pleasant but profitable. Professor Donnan, responding to the toast of "The Liverpool Section," proposed by Mr. Thomas Tyer, remarked that Liverpool is the centre of the chemical industry of England. Sir William Lever, proposing the toast of "The Guests," said that those men who were engaged in commerce felt that there was a missing link between the universities and the industries, and if that could be supplied in any way a great gain would result. Sir Edward Russell replied. On Friday the members visited Chester, also going up the river to Eaton Hall. Visits were also paid to Beeston Castle and Bunbury Church. In the evening the members, numbering about seven hundred, were entertained at the Liverpool Repertory Theatre. On Saturday an excursion was made to the Home Office experimental station at Eskmeals, Cumberland, by invitation of Sir Henry Cunynghame, K.C.B., Chairman of the Executive Committee on Explosions in Mines.

IRISH NEWS.

When sending newspapers to the Editor please mark the items of news to which you desire to call his attention.

Brevities.

Mr. A. Porter, Ph.C., Rathmore, Cregagh Road, Belfast, has passed the Third Professional examination for M.B., B.Ch., B.A.O., of Queen's University, Belfast. He was first in the honours, and obtained a prize of 40l.

Sir Charles Cameron has reported that the samples of drugs submitted by the Shillelagh Board of Guardians from the Tinahely Dispensary were correct. Of three samples from Carnew Dispensary two were correct and one was slightly high.

At Belfast Police Court on July 18, Hugh Hogg was charged on remand with an assault on Mr. Wm. Wilson,

an employé of Messrs. T. McMullan & Co., druggists, Ann Street. The assault was committed while Wilson was at his work. The Magistrates discharged the accused on his paying 2l. compensation.

Mr. H. E. Young, Ph.C. (Mr. R. A. Austin), Strand, Londonderry, applied to the Corporation for permission to erect an electric lamp on the footpath opposite his premises, now in course of erection. The application was granted subject to Mr. Young entering into an agreement to pay 5s. per annum and erecting the lamp to the satisfaction of the city surveyor.

At a meeting of the Cavan Board of Guardians last week, Sir Charles Cameron reported that the samples of drugs sent from Cavan and Arva dispensary districts were not forwarded in accordance with instructions of the Local Government Board, as there was no date on the bottles stating when the drugs were received from the contractor. The medical officer was asked to be more careful in future.

FRENCH NEWS.

(From the "C. & D." Paris Correspondent.)

A MORPHINOMANIAC having had a number of prescriptions printed bearing the name of a fictitious doctor, duly filled them up "H₂O, 30 grammes, chl. of morphine, 1 gr.," and forged a signature. A pharmacist having executed one of these prescriptions, was prosecuted and fined 100f. The maximum penalty being 3,000f., it is evident that the Court considered his responsibility limited; the point is whether he ought to have been condemned at all. Counsel for the prosecution insisted on the fact that the quantities (*i.e.*, the number of grams) were expressed in figures, and not in writing, as the law requires. The presiding Magistrate turned towards the eloquent barrister and quietly asked him if he believed doctors' prescriptions were always so faultlessly drawn up. The lawyer replied that they ought to be, and, if not, the pharmacist ought to refuse to execute them. Commenting on this case, a legal authority remarks: "As the decree of 1845 only regulates the sale, it does not touch doctors, who can thus continue to use figures instead of letters, and the only remedy would be for all pharmacists to invariably refuse to execute. In Sparta helots were flogged to teach children to be good; to-day pharmacists are punished to teach doctors to observe the law."

PUSHING BUSINESS.—The French Minister of Commerce is apparently anxious that all who run should read his agents' reports. I have seen some of them posted up in railway station waiting-rooms, and noted that Uruguay's perfumery imports, which were but 74,037 pesos in value in 1902, have now doubled, and that 70 per cent. of this total is supplied by France. But the U.S.A., Germany, and England compete very closely, and the French perfumers are advised to advertise freely in South America to hold their ground. Chemicals, pharmaceuticals, perfumery, and soap are mentioned among the goods which might be sold in Morocco. Here some very detailed advice is given to the would-be bagman. Spring and autumn are the best periods for travelling. Daily expenses (exclusive of fares) should be about 10f. to 14f. in the ports. When travelling with a caravan of one's own the outlay per diem may be 25f. to 35f. (say, 1l. to 30s.), but it should be borne in mind that if Fez and Marrakech be visited the daily expenses must be added to the "caravan" expenses.

WHEN AT PERPIGNAN recently I looked in at a pharmacy for a local guide. The proprietor so warmly recommended a certain little brochure in preference to all others that his insistence puzzled me till he revealed the cause. "I wrote it myself. Everything's in it." It had certainly the merit of being succinct. Its style is suggestive of our old friend Mr. Jingle. I cull a few specimens:

Le Boulon—the Vichy of the South—1 mile from station. Soda, alkaline, ferruginous, bicarbonated waters, for drinking cold 16° to 19°; stomach, liver. Four trains per day.

Amélie-les-Bains (pop. 1,382). Alt. 230m. Pujade, Roman, and military Thermal waters, soda, sulphurous waters, twenty springs 23° to 63°; tuberculosis, rheumatism, neurasthenia; mild winter climate; lowest Pyrenean resort; walks.

La Preste (St. Sauveur). Alt. 760m.; two sulphurous springs; urinary complaints.

Vernet-les-Bains (pop. 1,065). Alt. 620m.; sulphurous waters, soda basis, 8° to 66°; skin, mucus, respiratory organs; casino, park, villas.

Moligt and Les Escaldes come under the same head.

SOUTH AFRICAN NEWS.

(From "C. & D." Correspondents.)

"The Chemist and Druggist" is regularly supplied by order to all the members of the seven Societies and Associations of Chemists in British South Africa, as well as to other chemists in business there.

The Union.

VINEGAR REGULATIONS.—The "Board of Trade Journal" publishes particulars of an Act which prohibits the use of certain substances in vinegar and also regulates in certain respects its manufacture and sale in the Union of South Africa. The Act provides that no person shall manufacture or sell vinegar of any description which does not contain 4 per cent. (instead of 3½ per cent. as originally proposed) of acetic acid.

Transvaal.

ANALYTICAL CHEMISTS ORGANISE.—The annual general meeting of the South African Association of Analytical Chemists was held on June 23 at Johannesburg, Dr. J. McCrae presiding. The Council's report enumerated the steps which had been taken to form a South African Association of Analytical Chemists. They had now thirty-four members, representing approximately one-third of the analytical chemists of the Union. The following members of Council were appointed: Dr. J. McCrae, Professor G. H. Stanley, Mr. James Gray, F.I.C., Mr. A. Whitty, and Dr. J. Moir (Johannesburg), Dr. R. Marloth and Dr. C. F. Juritz (Cape Town), Professor R. B. Denison (Maritzburg), and Mr. J. S. Jamieson (Durban).

CHEMISTS' DANCE.—The first of a series of dances to be given during the winter by the Transvaal Chemists' Athletic Club was held at the Grand National Hotel, Johannesburg, on June 21, and was attended by a large number of guests, which included Mr. Ralling (President of the Pharmaceutical Society and also of the Athletic Club), who brought Mrs. Ralling; Mr. and Mrs. J. S. Hutcheson, Miss Bell, Miss Dard, Mr. E. W. Woods, Dr. and Mrs. Hall, Mr. and Mrs. H. Gaydon, Mr. and Mrs. Sive, Mr. C. Keir, Mr. and Mrs. J. Christie, Mr. Karnovsky, Mr. W. B. Marshall, Mr. Mills, Mr. Burrows, Mr. W. Clarke, Mr. Maxwell, Mr. Solomon, Mr. Richards, Mr. S. R. Potter, Mr. Dilling, and Mr. W. J. Smith. Blum's band played delightfully for the dancers, and during the evening the hotel management provided an excellent supper.

INDIA AND THE EAST.

(From the "C. & D." Correspondents.)

BUSINESS CHANGE.—Mr. C. H. Webber, of the George Town Dispensary, Penang, has acquired premises at 18 Main Road, Taiping, to be used as a branch dispensary.

COCAINE SMUGGLING.—The Customs Preventive Service, Calcutta, seized a little over half a maund (maund=82 lb.) of cocaine on board the Austrian-Lloyd steamer *Moravia* on June 24. The vessel was searched three times before the packet was found hidden in a narrow water-tank pipe, carefully packed in a waterproof covering.

WOMEN STUDENTS.—President Yanagizawa, of the Tokyo Imperial University, proposes to register women students, beginning with the coming term. It is now announced that two women have been successful in their matriculation examinations. They are Miss Umeko Tange (aged thirty-three), teacher of chemistry in the Women's University in Tokyo, and Miss Raku Makita (aged twenty-six), a graduate in the science course of the Women's High Normal School.

DRUGS AND MEDICINES FOR INDIA.—From a return published by the India Office, it appears that during 1911-12 proprietary and patent medicines were imported into India from the United Kingdom to the value of 141,449l., as compared with 141,680l., 125,691l., 96,553l., and 96,039l. in the four preceding years. France sent similar articles to the value of 9,363l., the United States to the value of 13,028l., and other countries to the value of 8,907l. In the best recorded year the United Kingdom also sent to India quinine to the value of 61,568l. and other drugs and medicines to the value of 164,793l. The total value of the chemicals imported during 1911-12 was 643,268l., of which the following were from the United Kingdom: Alum, 16,630l.; arsenic, 2,747l.; bleaching-materials, 23,926l.; borax, 4,850l.; calcium carbide, 6,259l.; copperas, 3,094l.; potassium cyanide, 20,315l.; disinfectants, 24,164l.; sal ammoniac, 17,667l.; saltpetre, 76l.; bicarbonate of soda, 31,329l.; caustic soda, 47,809l.; soda ash and crystals, 105,127l.; other soda-compounds, 11,406l.; sulphuric acid, 32,951l.; other chemicals, 138,533l.

ADULTERATION OF TURPENTINE.—The question of limiting the amount of adulteration in imported turpentine has been raised by the Bombay Government, who on May 9 forwarded to the Bombay Chamber of Commerce a copy of a letter received by them from the Government of India, and requested that the Chamber should give their opinion on the matter. In this letter the Government of India cited a suggestion made to them by the Government of Madras, to the effect that, in order to safeguard the interest of the purchasers and check the importation of an entirely debased form of turpentine, the permissible amount of adulteration in reduced turpentine should be fixed at 50 per cent. A similar suggestion had come from the same source in 1897, but at that time the Government of India had taken no action in the matter. They are still inclined to adhere to the view taken by them in 1897, and do not consider that any change in the existing rules under the Merchandise Marks Act regarding the marking of turpentine is necessary. In their reply to the Bombay Government, the committee of the Chamber of Commerce also agreed that no change is necessary. The percentage of adulteration in reduced turpentine is clearly marked on the drums and tins in which it is imported, and buyers are, they say, fully protected.



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[Historical Medical Museum.

PHARMACY POTS IN THE FORM OF OWLS.

These are used as ornaments in pharmacies of Southern Italy and Sicily

LEGAL REPORTS.

TRADE LAW.

Shops Act: "About the Shop."—At Bargoed on July 18, James E. George, manager of the Bargoed branch of Lipton, Ltd., was fined 5s. and costs for employing two assistants on the half-holiday afternoon. The evidence was that on June 5 the assistants distributed handbills relating to Messrs. Lipton's business. The defendant explained that he thought it was all right, as the assistants were not employed about the shop. The work was done voluntarily by the assistants, and they received a consideration for it. In support of his contention that this was a breach of the provisions of the Act, the case of Callman v. Roberts was cited, in which a newsagent's assistant had been employed a greater number of hours than was allowed by the Act in the distribution of newspapers. On the case going to appeal, the Judges held that the occupation came within the definition of "in or about the shop." The Bench, on the application of Mr. George David, agreed to state a case for a superior court.

A Traveller's Claim.—In the Lord Mayor's Court on July 21, before the Common Serjeant (Sir F. Bosanquet, K.C.), a claim was made by Mr. G. H. Madams, formerly a traveller in the defendants' employ, against F. A. Eschbaum, Ltd. (The United Factories for Surgical and Rubber Goods), 23 Clothfair, E.C. The claim was for 26l. 1s. 10d., made up of 9l. for salary at 1l. a week, 4l. 4s. a month's salary in lieu of notice, and the balance of 13l. 1s. 10d. for commission. On December 27, 1912, an agreement was entered into, and plaintiff carried on his work under it until March 5, when the defendants wrote to him that he should call at the warehouse. On March 14 another letter was sent to him, and on May 3 the defendants wrote giving plaintiff one month's notice, but on the evening of the same day they wrote another letter giving plaintiff instant dismissal, because, as they alleged, of insulting language directed against Dr. Weiss, manager of the defendant company. Mr. Willis, for the defence, urged that on March 14 an arrangement was come to that the December agreement should be cancelled, and that the plaintiff had broken his agreement by reason of his conduct. Eventually the jury found for the plaintiff, and awarded 9l. for salary, 4l. for salary in lieu of notice, and 5l. for loss of commission, or 18l. in all. His Lordship gave judgment accordingly, and directed that the claim to commission under the agreement of December 27 should be referred to the Registrar.

Chemists' Half-holiday.—On July 23, before Mr. R. H. Gillespie, at West Ham Police Court, L. R. Guest, Ltd., chemists, 245 Plashet Road, Upton Park, were summoned for contravening the provisions of the West Ham Chemists' and Druggists' Half-Holiday Order, 1912, by causing their shop not to be closed after 1 o'clock on the afternoon of June 26. Dr. C. Sanders, Medical Officer of Health for West Ham, prosecuted; Mr. C. H. Kirby defended. Ernest Frank Hughes, an inspector under the Shops Act, produced a certified copy of the Order, which specified that chemists' and druggists' shops should close at 1 p.m. on Thursdays throughout the year. On Thursday, June 26, witness went to the defendants' shop at Plashet Road at 9 p.m., and asked for two tins of vaseline and a pennyworth of camphorated chalk, for which he paid 3d. He told Mr. Lynn, the assistant, that he had bought the goods for the Medical Officer of Health for West Ham, and pointed out that the shop being open was an infringement of the provisions of the Chemists' and Druggists' Half-Holiday Order. Lynn replied to this, referring to the goods witness had bought, "They are necessities," to which witness replied "They are not exempted articles." By Mr. Kirby: He had not ascertained that the shop had been closed between 1 p.m. and 7 p.m., and it was not to his knowledge that all the chemists' shops in the district were open between 7 p.m. and 9 p.m. Mr. Kirby, for the defence, submitted that the summons ought to have been taken out under the Act itself, for there was no penalty provided under the Order. The schedule of the Act exempted from its operations "the sale of medicines and surgical and medical appliances," and the effect of the Order was to resist the closing to "the sale of medicines and surgical and medical appliances." Thus the chemist could sell anything but the articles included in the scheduled exemptions. Mr. Gillespie: The articles bought are sold by many other persons besides chemists. Dr. Sanders: That was one of the reasons for the purchase of them. Vaseline is sold by oilmen and by grocers, and it is also a medical appliance. Mr. Gillespie: The suggestion is that the Order, which has been approved by the Home Secretary, is *ultra vires*, and I am not going to hold that. You say the Order sweeps away the exemptions in the schedule of the

Act. Mr. Kirby: On one day of the week—Mr. Gillespie: The offence is keeping the shop open. Mr. Kirby: Under the Order there is no penalty for that—Mr. Gillespie: An Order is only an interpretation of an Act of Parliament, and where there is no penalty mentioned a magistrate can always fall back upon his old friend the Summary Jurisdiction Act.—Mr. Kirby: Chemists are obliged to do their dispensing under the Insurance Act, even on Thursdays.—Dr. Sanders: The chemists themselves applied for the Order to be made.—Mr. Gillespie observed that his sympathies were with the chemists, but he must impose a penalty. There would be a fine of 1s. and 6s. costs.

A Chemist's Advertisement Contract.—At the Norwich County Court on July 16, Judge Mulligan, K.C., heard an action by Mr. John T. Corder, chemist and druggist, of London Street, Norwich, against the Patent Hanging Book Cover Co., 99 Regent Street, London, for the rectification of a contract for an advertisement in a telephone book-cover. The contract was for three years, and plaintiff paid 4l. 4s. for the first year, and with reluctance gave a cheque for the second year, which he stopped after hearing the experience of others. Thereupon he was threatened by the company (which is not limited) with a City of London Court summons. He then commenced this action. After hearing the evidence, in the course of which he closely questioned Mr. F. C. G. D. Trantner, who appeared for the company, and said he is its manager, his Honour, in giving judgment for the plaintiff, said this was one of those frauds which are not unusual. The plaintiff was a chemist in Norwich, and the defendant was Maud Phoebe Trantner, the wife of Frederick Charles George Duvall Trantner, an undischarged bankrupt, and she carried on business under the high-sounding name of the Patent Hanging Book Cover Co., Ltd., at 99 Regent Street, Piccadilly Circus, London, W. On the evidence before him, in January 1912 someone whose name had not been disclosed appeared with a copy of one of this company's patents before the plaintiff for an advertisement for a year at a price of 4l. 4s. The plaintiff only agreed to take an advertisement for one year, and a contract was made out in the name of this Patent Hanging Book Cover Company. On the agreement, in the margin, was "Telephone 3257 Central, manufacturers, patentees, and advertisement contractors, Patent Hanging Book Cover Co., Ltd." That agreement, which was on a printed form, was made for three years from the date of the publication for four guineas per annum. The plaintiff swore there was no agreement to that effect, and he found as a fact that there was no such agreement. It was for one year only, and the agreement was obtained by misrepresentation and fraud. It was not a true agreement between the parties. The next step was that the advertisement was to be in gold and black, but it was all black, and not according to contract. That was complained of. When the second payment was requested the plaintiff repudiated it, and then there was called in Frederick Charles George Duvall Trantner, and he said that everyone else had paid, and showed plaintiff a number of cheques. After communicating with Messrs. Ash & Ward, the plaintiff stopped his cheque—and properly stopped it. The whole transaction was a fraud built upon a lie. The duty of the court was to rectify the contract, and make it in accordance with the true terms. That was to say, for one year, and to give costs. In order to endeavour to stop this sort of systematic fraud by undischarged bankrupts trading under high-sounding names in this way in London, he awarded costs under scale C. He ordered the contract to be rectified so as to be only for one year, and the cheque to be given up and cancelled.

High Court Cases.

Unless when otherwise stated these cases have been heard in the High Court of Justice, London.

AN AGENCY DISPUTE.

A preliminary action was brought in the King's Bench Division, before Mr. Justice Pickford, on July 22, by the Goldig Stopper Co., Ltd., of 2 Clenham Street, Southwark, against Strathmann & Joachim 20 and 21 Basinghall Street, E.C., to decide a point as to agency in a claim for 220l., balance of price of 5,000 gross of cork stoppers supplied and shipped to Japan. The defendants replied that they were not liable because they were agents for a disclosed principal, and they further said that the goods were of inferior quality and not up to sample, and were not accepted. After hearing counsel and evidence, his Lordship said the intention clearly was that the defendants should be the persons to whom the plaintiffs looked, and he must decide this preliminary point in favour of the plaintiffs. A declaration would be made in their favour, the plaintiffs to have the costs of the issue.

A CHEMICAL WORKER'S DEATH.

The case of Smith against Hardman & Holden, Ltd., came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Kennedy and Swinfen Eady, on July 18, upon the appeal of the company (the employers) from the award of the Blackburn County Court Judge in favour of the applicant, under the provisions of the Workmen's Compensation Act, the applicant being the widow of a man formerly employed at the appellants' chemical works, who died from blood-poisoning alleged to have been contracted in the course of his employment.

Mr. Sankey, K.C., in support of the appeal, said that his clients are tar-distillers, and for the purposes of their business they use spent oxide, which is roasted on burners, it being part of Smith's duty to put the stuff on the burners. By the roasting sulphur and ferric oxide are produced, and it is the sulphur that is of value, and it was a further part of Smith's duty to rake out the useless material. According to the evidence this made cracks in the hands, and, as originally made, the claim was that while following his employment on April 4 last Smith contracted blood-poisoning by washing his hands in dirty water. The Judge said he did not believe that; but the widow stated that on April 3 her husband came home with a sore on his thumb and told her that it was caused by a splash of acid. Although this evidence was objected to, and the County Court Judge thought it was inadmissible, he decided to hear it; but, said counsel, the evidence seemed to have coloured his mind afterwards. The learned counsel said there was but little doubt that the microbe that caused Smith's death entered the thumb, not at the point of the acid splash, but at a ragged piece of nail, and the doctor stated that it was impossible to say how it got there. In these circumstances he submitted there was no evidence on which the County Court Judge could properly find that there had been an accident, and that death resulted from it.

Mr. Banks having supported the award on behalf of the applicant, their Lordships held that as the County Court Judge's mind might have been coloured by the evidence, improperly admitted, there must be a new trial before another Judge.

Order accordingly.

Sale of Food and Drugs Acts.

AMMONIUM CARBONATE.

At Evesham Borough Police Court, Mr. John James Meakin, chemist, Evesham, was fined 10s. for selling ammonium carbonate 33.3 per cent. below strength.

SAFFRON.

At Plymouth last week, H. Laptain, 33 Whimble Street, Plymouth, was fined 3s. and 12s. costs for selling saffron which was certified by the public analyst to contain 11 per cent. of ash (boric acid and added mineral matter). For the defence it was stated that the saffron was verbally guaranteed by the produce broker, and was sold in a box which came direct from the importers.—West & Co., Whimble Street, were fined 10s. for a similar offence, the sample sold having been borrowed from Mr. Laptain.

A COMPOUNDED DRUG.

At Birmingham on July 18, G. V. Perkins, Ltd., chemists, of Colmore Row, were summoned under Section 7 of the 1875 Act for selling a compound drug which was not composed of the ingredients in accordance with the prescription. Mr. Prideaux, who prosecuted, said the prescription stipulated for 240 grains of potassium iodide dissolved in peppermint-water for an 8-oz. bottle. The mixture, however, contained only 205 grains of potassium iodide, a deficiency of 35 grains. He did not suggest that the defendants had been guilty of endeavouring to make an illicit profit; the deficiency was rather due to carelessness. Mr. Wylie, for the defence, submitted that the city analyst's certificate was not made out in accordance with the form prescribed by the Act, but the Magistrates overruled the objection. Mr. Wylie thereafter mentioned that a new man was in charge of the shop on the

morning the prescription was made up, and in the rush a mistake was made in weighing out the drugs. The offence was of a trivial character, he added. A fine of 20s., and costs, was imposed.

Pharmacy Acts.

THE IMPERSONATION CASE.

Before the Recorder (Sir Forrest Fulton) at the Central Criminal Court on July 21, Edward Wm. Roberts, of New Road, Woolwich, who pleaded guilty before Judge Lumley Smith last week to indictments charging him with unlawfully procuring himself to be registered on the Register of Chemists and Druggists by wilfully making and producing a false and fraudulent representation that he was Frederic Lancelot Roberts, his brother, surrendered to receive the judgment of the Court.

The Recorder (to the defendant): Are you prepared to pay the fine of 50l. imposed by Judge Lumley Smith?

Defendant: Yes, my Lord. [The defendant handed over the money to the chief warder.]

The Recorder: Having discharged your obligation you will now be released from custody.

BANKRUPTCY REPORT.

John Drake, 1 Drake's Fold, Towngate, Wyke, Bradford, described as Druggist.—The first meeting of creditors of this debtor was held at Bradford on July 21, when a statement of affairs was submitted showing gross liabilities 191l. 16s. (expected to rank for dividend 188l. 18s.), and assets estimated to produce 77l. 12s. 10d., leaving a deficiency of 111l. 5s. 2d. The receiving order was made on debtor's petition. Prior to 1880 the debtor, aged fifty-nine, worked as a horse-keeper at 1l. per week. He then commenced business as a coal dealer at Wyke with 30l., his savings. He also did a little leading and carting, and estimates that he made a net profit of 1l. per week. He continued the business until 1893, when he sold out, and again worked as a horse-keeper until January 1900, when he purchased for 50l. from his brother-in-law his present business, which had formerly been carried on by the debtor's father. He states that his turnover increased from between 6l. and 7l. to 10l. a week, but four years ago, through increased competition, the turnover began to fall, and later fell more rapidly, being at present only 30s. a week. In February his principal creditor began to press him, and on July 5 the Sheriff took possession under a writ of *fi. fa.*, and the debtor consequently filed his petition. He states that he has kept no books of account. The creditors for amounts over 10l. include: Brook, Parker & Co., Ltd. (19l.); Hirst, Brook & Hirst, Leeds (16l.); and J. Savage & Co., Ltd., Bradford (31l. 3s. 2d.).

GAZETTE.

Partnerships Dissolved.

DICKINSON, A. J., and JENNINGS, W., Booth Street, Manchester, chemical agents, drysalters, and indigo merchants, under the style of Albert Kenyon.
RIGBY, J. A., and RIGBY, C. S. A., Preston, physicians and surgeons.

LIMITED COMPANIES.

New Companies Registered.

The letters P.C. mean Private Company within the meaning of the Companies Act, 1907, and R.O., Registered Office.

(NEW) PLANTOIDS, LTD. (P.C.).—Capital 30,000l. Objects: To acquire the business of Plants Plantoids, Ltd., 5 Lloyd's Avenue, E.C.

ANGLO-RUSSIAN TURPENTINE CO., LTD. (P.C.).—Capital 18,000l. Power is asked to adopt agreements (1) with J. Schindelmeyer, (2) with G. A. A. W. Arldt, and (3) with the Produce Brokers Co., Ltd.

GEORGE T. HOLLOWAY & CO., LTD. (P.C.).—Capital 15,000l., in 1l. shares. Objects: To take over the business of a metallurgist, chemist, assayer, engineer, and sampler carried on by G. T. Holloway.

BRADDOCK & BAGSHAW, LTD. (P.C.).—Capital 3,000l., in 1l. shares. Objects: To take over the business of a chemist,

druggist, etc., carried on by H. Bagshaw at 37 Yorkshire Street and 340 Manchester Street, Oldham, as "Braddock & Bagshaw." The first directors are H. Bagshaw and Mrs. A. J. Bagshaw.

L. PORRO, LTD.—Capital 35,000*l.*, in 1*l.* shares. Objects: To take over the business of dental supply merchants and manufacturers of dental instruments and appliances carried on by L. Porro at 33 New Cavendish Street, London. The first directors are L. Porro (chairman), J. W. Dingle (managing director), and W. H. Partridge (assistant managing director).

F. J. NASH, LTD. (P.C.)—Capital 5,000*l.*, in 1*l.* shares. Objects: To take over the business carried on by F. J. Nash at 48 Broad Street and Severn Side, Newtown, Montgomery, and to carry on the business of chemists, druggists, dry-salters, oil and colour men, mineral-water manufacturers, manufacturers of and dealers in photographic, optical, and surgical requisites, etc. The first directors are F. J. Nash, J. E. Whipp, and G. H. Butt.

Company News.

KENT PHARMACY CO., LTD.—A notice of the appointment of S. G. H. Lester, 226 Blackfriars Road, S.E., as receiver or manager on July 8, has been filed.

TREFOREST CASH CHEMISTS CO., LTD.—Creditors' claims to be sent in to the liquidator, Mr. J. W. Kinsman, 2 and 3 Taff Street, Pontypridd, on or before July 26.

PAINE & CO., LTD.—At the seventeenth annual meeting at St. Neots, on July 17, the Chairman (Mr. A. W. McNish), in moving the adoption of the report and accounts (*C. & D.*, July 12, index folio 45), said the malt-extract plant was working night and day. An additional steam boiler was being put in to take full advantage of the other new plant. The motion was adopted, and Mr. Sibley, the retiring director, was re-elected. Mr. M. McNish was appointed a director.

UNOL, LTD.—In the Chancery Division, before Mr. Justice Neville, on July 22, a petition was heard for the winding-up of Unol, Ltd., presented by Mr. Wm. Henry Murray, of 18 Elmhurst Mansions, Clapham, a chemist, and who was formerly in the employ of the company. Mr. Palmer, who appeared in support of the petition, said that Mr. Murray had obtained judgment against the company for 50*l.*, a quarter's salary, and costs, the total being 71*l.* 10*s.* It was impossible to levy execution because, said counsel, there were no goods or chattels, and the offices of the company were at the offices of their solicitors. Counsel for the company opposed the petition, and said he had an affidavit from the secretary. His Lordship read the affidavit, and said it was one he thought he should allow to be read, and that it required answering. The case was adjourned for a week for affidavits to be prepared and answered.

BIRTHS.

HARPER.—At 39 Camden Street, Belfast, on July 9, the wife of Theo. Harper, Ph.C., of a son.

HENDERSON.—At 637 Cranmore Crescent, Belfast, on July 13, the wife of David Henderson, Ph.C., of a daughter.

MARRIAGES.

CRICHTON-BELL.—At St. Marylebone Presbyterian Church, London, W., by the Rev. R. C. Gillie, on July 16, Thomas Crichton, chemist and druggist, to Margaret, youngest daughter of the late Mr. Walter Bell and Mrs. Bell, Penicuik.

DOBBIE-BROWN.—At St. Paul's Church, Landore, on July 15, David Dobbie, only son of Mr. David Dobbie, chemist and druggist, Wallacetown, Ayr, to Gladys Brown, daughter of the late Mr. J. T. Brown, of Heathfield, Swansea.

MANSON-EASSON.—At the County Hotel, Lothian Road, Edinburgh, by the Rev. John G. Dickson, on July 16, James Manson, pharmacist, eldest son of W. M. Manson, pharmacist, 50 Comiston Road, Edinburgh, to Minnie, eldest daughter of Mr. John Easson, London.

DEATHS.

ALEXANDER.—At Gowanbank, Alford, Aberdeenshire, on July 18, Mr. Alexander Alexander, chemist and druggist, aged fifty-nine. Mr. Alexander had had a long illness. He was a native of Fyvie, and passed the Minor examina-

tion in 1874 before he had reached his majority. Subsequently he studied medicine and passed the earlier professional examinations, but the work not being congenial to him he returned to pharmacy, and carried on a large and successful business at Alford. He took an active part in local public work, was clerk to the local Council and treasurer of the local Lodge of Oddfellows. He is survived by Mrs. Alexander and two sons and two daughters. One of the sons is in the business.

ANTHONY.—At his residence, Plasturton Avenue, Cardiff, on July 19, Mr. David Anthony, chemist and druggist, of Messrs. Anthony & Co., chemists, Queen Street, Cardiff, aged seventy-three. Mr. Anthony was a native of St. Clears, and served his apprenticeship at Narberth. He first went to Cardiff as an assistant with Messrs. Williams & James. He obtained experience on the Continent in Paris, returning to this country just before the siege. Mr. Anthony then purchased the business carried on by Mr. Williams in the Royal Arcade, and subsequently opened other premises in Queen Street. The latter business he sold to Mr. D. Harries, who a year or two before the expiry of the lease sub-let to a florist, and opened fresh premises a few doors away. Mr. Anthony then purchased the shop and reopened it, carrying the business on successfully up to the time of his death. Combining with business ability a genial personality, Mr. Anthony was popular with all classes. He included a fancy goods department with his chemist's business, and always maintained a most attractive window display. Mr. Anthony never took a prominent part in public life, but in 1904 he was president of the local Pharmaceutical Association. Mr. Anthony was twice married, and now leaves a widow and two daughters. The funeral took place at the New Cemetery, Cardiff, on July 23.

DALTON.—At his residence, 14 Frognal Lane, Hampstead, London, N.W., on July 19, Mr. Rowland Neale Dalton, aged seventy-three. The late Mr. Dalton was the senior partner of Messrs. Dalton & Young, druggists, 38 Fenchurch Street, London, E.C. He had been associated with the Mincing Lane produce trade for over half a century, and was one of its leading members.

HOUGHTON.—On July 20, Mr. George Houghton, chairman of the board of directors of Houghtons, Ltd., High Holborn, London, W.C., aged seventy-seven. Mr. Houghton was born in 1836 at 89 High Holborn, a couple of years after his father had become a partner with Mr. Claudet. The firm of Claudet & Houghton at that time held the sole rights for the new patent process of photography (Daguerreotype), and anyone desirous of producing photographs had to obtain a licence from the Houghton firm before he could do so. The supply and manufacture of the various materials and apparatus required in other processes of photography was a natural transition in the business. Mr. George Houghton joined the firm in 1852, and the style became George Houghton & Son, which it retained until 1904, when the business was incorporated as Houghtons, Ltd. Mr. George Houghton's life has been an exceedingly active and strenuous one, and it was due to his ability, powers of organisation, and foresight that the business of Houghtons, Ltd., has increased in his lifetime from a small one employing four persons to a large manufacturing and distributing concern with over 1,500 employés. Mrs. Houghton survived her husband only a few hours, having been taken ill a day or two previous to Mr. Houghton's death.

OUGH.—At St. Wenna, Liskeard, on July 20, Sarah, widow of Mr. Lewis Ough, chemist and druggist, Liskeard, aged seventy-five.

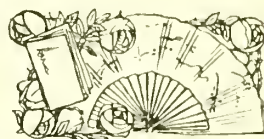


MR. HOUGHTON.



GUILDHALL

CONFERENCE SOCIAL SIDE



Jubilee Meeting of the British Pharmaceutical Conference :
Report begins on p. 166.

The President and Mrs. Umney, p. 155.

The Presidential Address on a British Imperial Pharmacopœia, p. 150.
Conference Papers and Discussions, p. 169.

A BRILLIANT OPENING to the fiftieth annual meeting of the British Pharmaceutical Conference was afforded by a reception at the Guildhall, in the City of London, on Monday evening, July 21. Mr. Edmund White, Chairman of the Local Committee, and Mrs. White first received the guests, who then shook hands with Mr. John C. Umney, President of the Conference, and Mrs. Umney, who stood on a dais under the canopy beneath which the Lord Mayor sits at City banquets. There were many distinguished people present. We observed Sir William Crookes, O.M., and Lady Crookes, Sir Edward Evans, Dr. J. J. Dobbie and Mrs. Dobbie, Professor W. P. Wynne (of Sheffield), Mr. W. F. Reid, Dr. Thorne, Mr. W. S. Glyn-Jones, M.P., and Mrs. Glyn-Jones, Professor Hodgkinson, Dr. J. Smith Whitaker, Professor Cushney, and many others whom to name would be simply to repeat the list of those who attended the Conference during the week. The Imperial Orchestra discoursed a programme of music in the gallery of the Guildhall, which, by the way, was nicely carpeted and seated, and was comfortably full when Sheriff



RT. HON. SIR DAVID BURNETT.

Lord Mayor and Lady Mayoress of the City of London.

[Photo: by Miles & Kaye, Cheapside, E.C.]



LADY BURNETT.

Bower and Mrs. Bower, and the Right Hon. Sir David Burnett, Lord Mayor, and the Lady Mayoress, were announced. After they had shaken hands, "Silence for the Lord Mayor" was called by the usher, and his Lordship addressed the assembly. He expressed great pleasure in welcoming the Conference to the Guildhall, adding that the importance of the work of the Conference could not be over-stated, and the interest shown in it was proved by the fact that delegates were present from so many countries abroad. He spoke of the objects of the Conference as formulated in its constitution, and said that it had been of considerable benefit both to the retail and wholesale departments of the drug-trade by its encouragement of friendly relations; and by the establishment of a research fund and in other ways it had enabled the members to keep astride with the progress of science and medicine. Considering all that the Conference had done since its establishment in 1863, the Corporation felt that a great honour was done to it by the gathering in the Guildhall on the occasion of the Jubilee. His Lordship then referred to the number of distinguished men of science who had been connected with the Conference from the first, and commended the principle of purity of medicines, which is one of the Conference objects, remarking that this had been truthfully and faithfully carried out by the Conference. In concluding, he repeated his warm welcome to the members and delegates, and expressed the hope that the Conference would long con-

tinue its useful work for the benefit of the members and for the public good; while, turning to the President, he said: "Let me offer you, Sir, and your wife, thanks for inviting us to be present." Mr. Umney, in a brief reply, thanked his Lordship for his kind words, and expressed the feeling of all present in saying that it was a privilege to meet in the Guildhall. The mayoral party then mixed with the company, which wended its way round the art galleries and down to the crypt, where refreshments were served. A concert was given in the Art Gallery by Miss Annie Bartle, Miss Bertha Gelder, Miss Maud Horne, and Mr. Alfred Heather, and was much appreciated. Eleven o'clock was the hour for departure, and the fact that most of the company were surprised when it came shows how much they enjoyed themselves.

The dinner in the King's Hall on Tuesday evening was attended by 440 members and their friends, seventy more than were expected. The company filled the floor of the hall, the side passages, and the galleries. It was a very gay scene when all were seated and ready about 7.45 for the

hors d'œuvres. By this time it had been known that Mr. J. C. Umney was the Chairman, and he sat at a table on the north side of the hall, being supported on the left by Mrs. Umney, Sir William Baxter, Lady Baxter, Mr. Charles Umney, Miss Bourdas, Mr. I. Bourdas, Mr. W. H. Quarrell, Mr. E. S. Peck, Mr. E. M. Holmes, Mr. and Mrs. J. P. Gilmour, Mr. and Mrs. Harrington, and Mr. and Mrs. Woolcock. On the right were Mrs. Edmund White, Sir Edward Evans, the President of the Pharmaceutical Society, Mr. D. Lloyd Howard, Mrs. Glyn-Jones, Mr. Glyn-Jones, Miss Wells, Mr. W. F. Wells, Mr. A. S. Campkin, Mr. T. H. W. Idris, Mrs. Idris, Professor Greenish, and the Dutch delegates. The Committee, very daring, had not "placed" the rest of the company, but entrusted to the stewards the task of placing everybody comfortably, and the arrangement was a success. It was really astonishing to find how the tables, seating from four to a dozen, were filled in each case with the very people who seemed to want to be together, or to find each other's company very pleasant when they did get together. The dinner, from hors d'œuvres to café, was one that pleased everybody immensely, and it was a little surprise to some to discover the number of young ladies who took Cigarettes Russes along with the Sorbet au Kirsch. After dinner the Chairman gave the speech of the evening, and we are able to report it verbatim from memory; it was, "Ladies and Gentlemen, The King!" This toast having been drunk.

Miss Milly Kerr-Smith sang the National Anthem, and so the evening proceeded, the programme of music being rendered by Miss Kerr-Smith and Mr. Alfred Heather by themselves and together in German's duet "Come to Arcady," Mr. Douglas Rogers accompanying them on the piano. It was all good. During the dinner the Imperial Quintet rendered twelve pieces. It may be said, without reflecting upon the past or unduly praising the committee of stewards who arranged this function, that never has there been in Conference experience so delightful a dinner. That was said over and over again to our representatives by visitors to London, who were by this time beginning to feel overwhelmed by the hospitality that London was giving them.

Students of physiognomy have a nice little exercise presented to them in this portrait, which is the same subject as that on p. 155 after twenty-eight years. The photograph was taken immediately after Mr. Umney was elected a member of the Conference in 1885, and when he was entering on his apprenticeship with William Martindale. The second engraving presents him in another guise, as Celia in "As You Like It." Celia is the damsel on the left reading a letter. "The Alceyanian" of February 1884, reporting on the Dulwich play, said: "Celia was represented by Umney in a manner quite in keeping with the



MR. J. C. UMNEY.

From a photograph taken in 1885.

part. . . His acting was specially good where Celia banters Rosalind on her anxiety to know who it is who has carved her name. . . Umney grasped the true disposition of Rosalind's 'pretty little eoz.' and impersonated the far less



popular rôle with dignity, freedom, and success." Rosalind, the figure on the extreme right, was played by Mr. R. N. Douglas; Oliver was impersonated by Mr. A. E. W. Mason, the novelist, who was M.P. for Coventry for four years.

Mr. Edward Henry Farr, Ph.C., F.C.S., who succeeds Mr. John C. Umney as President of the Conference, served a



MR. E. H. FARR.

the Society's bronze medal, and the Peter Squire prize.

His first post-graduate position was in Messrs. Wright, Layman & Umney's analytical laboratories, where he remained for about two years, and during that time was Secretary to the Chemists' Assistants' Association (1886). After six months at Torquay, he purchased in 1883 a pharmacy in High Street, Uckfield, Sussex, which he still carries on. He devotes himself to public work there, chiefly educational. Mr. Farr's work for pharmacy has been voluminous: it commenced with a paper to the 1886 Conference in association with Mr. J. O. Braithwaite. With Mr. Robert Wright he has collaborated in at least twenty-five papers. He is a genial, unassuming man, and he will make a good President.

Mr. Ernest Saville Peck, M.A., Ph.C., whose services as an Honorary Secretary of the Conference for eleven years were recognised by the presentation to him on Wednesday afternoon, is a son of the late Alderman George Peck, of Cambridge, and he has two brothers on the Register of chemists. Mr. Saville Peck passed the Minor examination in February 1883, and the Major in October 1889. He also studied at Cambridge University, and in due course graduated in Arts. He has contributed papers to the Conference, has acted, and still acts, as an Examiner to the Pharmaceutical Society, and was appointed Hon. Secretary of the Conference when Mr. Naylor retired from the office in 1901 after acting for fifteen years. Professor Atfield served for seventeen years, and Mr. Bengier for thirteen. Mr. Peck stands fourth in record of service. He acquired his father's business in Trumpington Street, Cambridge.



MR. E. S. PECK.

As soon as the vote of thanks to the President had been accorded and replied to by him on Tuesday forenoon, most of the ladies and many of the gentlemen in the meeting left the Throne Room. Five motor-buses were waiting in Newton Street, and were quickly filled by those who desired to join in the ladies' excursion to the City. They left about a quarter to twelve, and disembarked on reaching the Mansion House, where the men-servants conducted the party through the reception hall to the dining-room. There the table was laid for luncheon, and the guides gave the ladies just those little details in regard to the daily custom that they wanted to know. The gold plate was much admired. It was explained that each occupant of the Mayoral chair adds a piece to the plate on quitting office. The Venetian Chamber was also inspected, as well as the drawing-room, and all were delighted with what they saw and were told.

The visit to the Church of St. Bartholomew the Great was then taken. The church is one of three Early Norman edifices in London, the others being in the Tower of London and in the Temple. Mr. E. A. Webb, Ph.C. (Evans Sons Lescher & Webb, Ltd.), and his brother, Sir Aston Webb, R.A., have been working together for many years in the restoration of St. Bartholomew's, and Mr. Webb received the party, the size of which surprised him, so he asked the two hundred to sit in the pews while he explained to them the history of the church and of the restorations. A most interesting twenty minutes' talk he gave, to the great delight of the company, most of those present having been quite unaware of the treat that had been in store for them. The walk round the church and down to the crypt after Mr. Webb's lecture was doubly enjoyed on account of his explanations, and everyone felt herself or himself to be Mr. Webb's debtor. Mr. T. E. Lescher was steward of the party, but a lady steward and a gentleman were in charge of each bus.



MR. E. A. WEBB.

WHO WERE THERE.

Most of the following signed the attendance-book:

- Abraham, T. F., Mrs., and Miss, Liverpool
 Allen, C. T., London
 Allen, G. S., Long Melford
 Allen, Kenneth C., and Mrs., London
 Andrews, Mrs. C. E. J., London
 Antcliffe, H., and Mrs., Sheffield
 Arkle, W., Mrs., and Miss, Lancaster
 Arnold, H. R., London
 Ashton, F. W., and Mrs., London
 Atkins, S. R., Salisbury
 Atkinson, A. P., London
 Baker, C. H., Cosham
 Baker, H. W., London
 Balfour, A., Manchester
 Bannerman, R. I., and Mrs., Edinburgh
 Barlow, T. O., and Mrs., Southsea
 Bartlett, Miss D. J., London
 Bascombe, F., and Mrs., London
 Batchley, Mrs., Fareham
 Bates, F. W., and Mrs., Manchester
 Bates, W., and Mrs., Southampton
 Baxter, Sir Wm. J., and Lady, Coleraine
 Bayley, C., and Mrs., Uppingham
 Bayne, T., Edinburgh
 Bennett, R. R., and Mrs., London
 Benson, R. H., London
 Bexton, J. W., Manchester
 Bilson, F. E., and Mrs., Bournemouth
 Bird, F. C. J., London
 Blakie, A. T.
 Blenkinsop, J., and Mrs., Edinburgh
 Boehm, F., London
 Bourdas, Dr. E. C., and Mrs., London
 Bourdas, I., and Miss, London
 Bowie, G. D., London
 Braithwaite, J. O., Mrs., and Miss, Chingford
 Brammall, R. T., Mrs., and Miss, London
 Branson, F. W., and Mrs., Leeds
 Brewis, E. T., London
 Brooks, C., London
 Brown, G., Croydon
 Browne, W., and Mrs., London
 Buchanan, Miss M. E., London
 Buckingham, H. L., and Mrs., Birmingham
 Bullen, F. E., Princetown
 Burgum, Miss, London
 Campkin, A. S., Cambridge
 Carr, F. H., London
 Carter, J. C., London
 Carter, S. A., London
 Chapman, R. S., and Mrs., Donegal
 Chater, A. J., London
 Cholerton, A. F., and Miss, Leicester
 Church, E. H., Cambridge
 Clague, T. M., and Mrs., New-castle-on-Tyne
 Claremont, Miss H. E., London
 Clayton, J. W., and Mrs., Adelaide
 Cleworth, J., Manchester
 Coats, J. T., and Mrs., Leith
 Conder, E. A., and Mrs., Bournemouth
 Cooper, J. W., Durban
 Craig, Miss J., London
 Crawshaw, E., London
 Cripps, R. A., Hove
 Crombie, J., and Mrs., Glasgow
 Cross, W. G., Mrs., and Miss, Shrewsbury
 Crompton, H., Bury
 Crowsley, Professor A. W., London
 Cuff, J. H., London
 Dale, Dr. H. H., London
 St. Dalmas, W. H. E. de, Leicester
 Deane, H., and Mrs., Long Melford
 Dey, A. J., Edinburgh
 Dolbear, J., Oxford
 Douglas, J. W., London
 Duncan, W., Mrs., and Miss, Edinburgh
 Dunn, W. R., and Mrs., Oaken-gates
 Elmitt, W., and Mrs., Derby
 Evans, J., Cambridge
 Evans, Sir E., Liverpool
 Farr, E. H., Uckfield
 Finnemore, H., and Mrs., Croydon
 Flanders, H., Mrs., and Miss, Cambridge
 Fletcher, F. W., Windmill, Enfield
 Foggan, G., and Mrs., Bedlington, Northumberland
 Forbes, J. G., Perth
 Forbes, W., and Mrs., Perth
 Forncau, —, Paris
 Foster, J., and Miss, Glasgow
 Francis, Alan, and Mrs., London
 Francis, G. B., and Mrs., London
 Francis, R. P., Mrs., and Miss, Melbourne
 Franklin, J. H., Manchester
 Fraser, A., Paisley
 Gadd, H. W., and Mrs., Exeter
 Gamble, F. W., and Mrs., Harrow
 Gibson, G. W., London
 Gibson, Misses A. and M., London
 Giles, W., Aberdeen
 Gilling, C., Bagshot
 Gilmour, J. P., and Mrs., Glasgow
 Glass, W. S., Mrs., and Miss, Edinburgh
 Glyn-Jones, W. S., M.P., and Mrs., London
 Goldthorpe, A., London
 Goodall, F. C., London
 Goodall, T. S., London
 Goodyer, N. S., London
 Greenhill, F.
 Greenhill, H. G., and Mrs., London
 Grier, J., and Mrs., Manchester
 Grimes, H. C., and Mrs. E. L., Blackrock, Dublin
 Gulliver, W. F., and Mrs., London
 Gunn, A., London
 Hampshire, C. H., London
 Hanson, A., Queensbury
 Harrie, H. W., Bournemouth
 Harrington, J. F., Mrs., and Miss, London
 Harrison, E. F., and Mrs., South Croydon
 Havard, H. L., and Mrs., Swansea
 Haworth, J. B., Manchester
 Hendry, R. L., and Mrs., Edinburgh
 Heseltine, C. J., and Mrs., New-castle
 Hewlett, V. C., London
 Heywood, S. J., London
 Higgs, A., and Mrs., Kingston-on-Thames
 Hill, C. A., and Mrs., London
 Hillick, Mr. and Mrs., Birmingham
 Hills, J. S., and Mrs., London
 Hinks, E. A., London
 Hinkman, J. and J. F., Carlisle
 Holland, F. W. C., and Mrs., London
 Holmes, E. M., London
 Hope, J., and Mrs., Manchester
 Howard, D. L., Chingford
 Howell, A., London
 Howie, W. L., and Mrs., London
 Hughes, D. C., Birkenhead
 Humphrey, J., and Mrs., London
 Humphrey, W., and Miss O., London
 Idris, T. H. W., and Mrs., London
 Idris, W. T. W., and Mrs., London
 Jacks, D. R., London
 Jackson, R. E., Dartford
 James, J., London
 Jarvis, Dr. J., and Mrs., Paris
 Jenkins, A. H., and Mrs., London
 Jennings, J. A., London
 Jones, H. H., and Mrs., Liverpool
 Jowett, Dr., H. A. D., and Mrs., Dartford
 Keall, J., and Mrs., London
 Keith, A. R., and Mrs., London
 Kemp, H., and Miss, Chorlton-cum-Hardy
 King, Miss K. M., Liverpool
 Knott, H., Bolton
 Last, G. V. C., and Mrs., Liverpool
 Layman, E. B., and Miss F., London
 Lescher, T. E., and Mrs., London
 Lloyd, Isaac, London
 Loxley, F. L. K., Oxford
 Lucas, E. W., and Mrs., London
 Lucas, H., and Mrs., London
 Mabon, T., London
 Macdonald, Alex., and Mrs., London
 MacEwan, P., Mrs. and Misses, London
 Macfarlane, M., Forfar
 MacKenzie, D., Mrs., and Miss, London
 MacKenzie, J. M., Edinburgh
 McWalter, Dr. J. C., Dublin
 Mair, W., Edinburgh
 Mallett, T. J., Cambridge
 Mann, E. W., and Mrs., Birmingham
 Marsden, P. H., and Mrs., Liverpool
 Marshall, J. D., and Mrs., Martin, H., East Croydon
 Martin, N. H., and Miss, New-castle
 Mather, W. H., Godalming
 Matthews, J. H., and Mrs., London
 Mayne, A., and Mrs., Cork
 Melhuish, A. R., and Mrs., London
 Middleton, A., and Mrs., Nottingham
 Miller, W. E., and Miss G., London
 Milne, A., Greenwich
 Milner, J., and Mrs., Greenwich
 Mitchell, J. B., and Mrs., London
 Mitchell, D., Inverness
 Morson, T. P., London
 Mumford, H. G., Inverness
 Naylor, W. A. H., Bromley, Kent
 Nelson, W. B., and Mrs., London
 Nesbit, James, Edinburgh
 Nicholl, J. W., Belfast
 Nicholl, T., Belfast
 Otley, Thos., and Miss, Birmingham
 Park, J., and Mrs., Newcastle
 Parsons, Miss D. M., Seven-oaks
 Pearson, G. E., London
 Peck, E. Saville, Cambridge
 Pescod, W., and Miss, New-castle
 Phillips, H. A., Wolverhampton
 Phillips, Sidney, and Mrs., Wolverhampton
 Pidd, A. J., and Miss M. E., Manchester
 Pinchem, W. J., and Mrs., London
 Pollard, E. W., Ryde
 Poole, Jeffrey, and Mrs., Birmingham
 Potter, A. L., London
 Potter, W., and Mrs., Plaistow
 Power, Dr. F. B., London
 Pratt, W. R., Louth
 Present, C. S., and Mrs., London
 Procter, H. Raithby., Mrs., and Miss, London
 Ransom, F., Hitchin
 Reekie, Balfour, Hamilton
 Rees, R. P., Dowlais
 Reith, J. R., Cults
 Renouf, Miss Nora, London
 Richards, J. H., and Mrs., Birkenhead
 Richardson, W. J., Edinburgh
 Robinson, R. A. Jun., and Mrs., London
 Rogers, F. A., London
 Rowsell, P. F., Exmouth
 Royle, J. W., London
 Sanger, E., and Mrs., London
 Saunders, W. H., and Mrs., Liverpool
 Say, Victor, Melbourn
 Sayer, E. C., and Mrs., Ipswich
 Sayers, W. C., and Mrs., London
 Self, P. A. W., London
 Sharvill, F., and Mrs., Staines
 Sheard, Miss E. I., Doncaster
 Shears, J. C., Doncaster
 Sheppard, W. F. J., Chester
 Simmons, W. H., London
 Simpson, H. P., Morpeth
 Simpson, J. Munro, Morpeth
 Simpson, T., and Mrs., New-castle
 Skinner, Herbert, and Mrs., London
 Smith, A. R., Leeds
 Smith, Bernard, and Mrs., London
 Smith, E. H., Gosport
 Smith, F., and Mrs., Handsworth
 Smith, J. Beddall, London
 Solomon, A. H., London
 Stamp, F. U., and Mrs., London
 Stephens, H. I., London
 Stephenson, Thos., Edinburgh
 Stephenson, W., Southsea
 Stevenson, H. E., London
 Steward, Alderman J. A., Worcester
 Stiles, M. H., Doncaster
 Storey, W. A., and Miss, London
 Suyver, Dr. J. H., Amsterdam
 Symes, Dr. Chas., Liverpool
 Tait, J., Edinburgh
 Thomas, J. A., and Mrs., Cheltenham
 Thomas, J. O., London
 Thomson, Miss A. G. L., Orange, N.J.
 Tocher, G. A., and Mrs., London
 Turney, J. Davy, Plymouth
 Tyrer, T., Stratford
 Udale, G. W., London
 Umney, Chas., London
 Umney, J. C., and Mrs., London
 Umney, J. Howard, London
 Umney, Mrs. W. F., London
 Van der Wielen, P., Amsterdam
 Van Gorcum, W. C., Rotterdam
 Wallis, T. E., Brookwood
 Walshaw, R. C., and Mrs., Hndersfield
 Want, W. P., and Mrs., London
 Wardle, Miss E., London
 Warner, C. H., London
 Warrick, R. W., London
 Watkinson, H. A., Farnworth
 Watson-Will, Mrs., London
 Wellcome, H. S., London
 Wells, W. F., and Miss, Dublin
 Whatmough, W. A., London
 Whigham, R. L., London
 White, Edmund, and Mrs., London
 Widdowson, T. S., and Mrs., London
 Williams, T. R., London
 Williamson, S., Haddington
 Wilson, W. P., Haddington
 Wing, A. J., Woolwich
 Wood, W. H., and Mrs., Plymouth
 Woolcock, W. J. U., and Mrs., London
 Woolley, S. W., London
 Worfolk, G. W., Ilkley
 Wride, F. B., Southampton
 Wright, A., London
 Wright, H. C., London
 Wright, R., Buxton
 Wyatt, H., Bootle
 Wyatt, W., and Mrs., Manchester
 Young, R. F., New Barnet

The weather was fortunately fine for the Garden Party on Wednesday afternoon in the Botanic Gardens, Regent's Park. Most of the members went in taxicabs, as it was recognised that the difficulties of the geography of London are best overcome in this manner. Entering the South Gate, which is opposite the new buildings of the Bedford College for Women, the members found Mr. and Mrs. Umney and party in a marquee furnished with crimson and gold chairs. Hand-shaking occupied about half an hour, and then Mr. Skinner induced the visitors to arrange

themselves on a grand stand for the purpose of being photographed. This was a long process, and Mr. Skinner's patience in carrying out his duties was the admiration of many. The number of people in the photograph made the task a difficult one, but to make sure of a good result five pictures were taken. After this most of the members made a straight line to the tea marquee, which was soon crowded. After tea the various attractions of the garden were patronised, the floral beauties being at their best. Shortly before seven, with the smoking-concert in view, the members returned to their hotels.



MRS. AND MR. E. WHITE.
The morning after the Reception.



THE THREE GRACES.
Mesdames E. White, Umney, and Glyn-Jones.



A GROUP OF FAIR LADIES, CHIEFLY VISITORS.

We shall name the ladies next week if each one will be good enough to drop us a postcard indicating to us her position in this or other photographs.

When Mr. Woolcock agreed to act as Local Secretary for this meeting, his Insurance Act work seemed to have passed, and the volume of what had to be done in respect to the Insurance dispensing was still without form. Nobody dreamt that he would within a year be called upon to take up the duties of Secretary and Registrar of the Pharmaceutical Society. Now that the Conference work is practically over, and not a grumble has been heard from any visitor, or anybody else, regarding the arrangements, he has the satisfaction of having done a thing that nobody else has ever done. This to a working man is better than praise, but we would not like this issue to go to press without this brief statement. All whom the



MR. WOOLCOCK.

Local Committee appointed as stewards did their duties smoothly, without fuss, and efficiently. Of each of them it is possible to write something nice. Everyone seemed so solicitous to make anyone she or he met feel quite at home. But that had been achieved by all, the stewards having done their tasks, and leaving nothing undone.

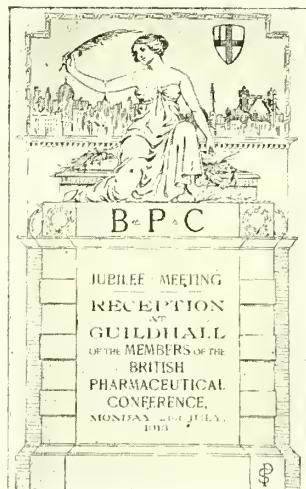
Before entering Windsor Castle everyone was to sign the following declaration (date altered in this case to suit the Conference visit):

I hereby declare that I am in no way connected with the militant Suffrage movement, and that I desire to be included in the party to be conducted over the State apartments at Windsor Castle on Thursday, July 24.

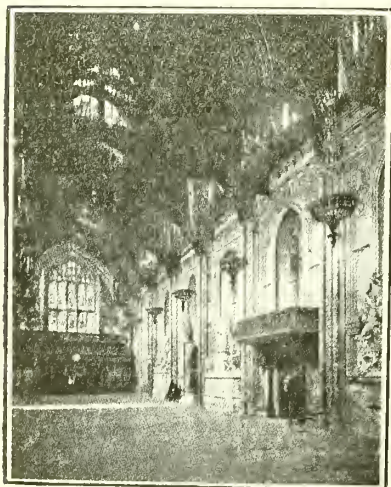
This was signed at the Holborn Restaurant on Tuesday and Wednesday.

The luncheons served on Tuesday and Wednesday in the King's Hall were excellent, and gave satisfaction all round. The service was from 1.30 to a few minutes before half-past two. Thanks to the fine organisation in the Holborn Restaurant, there was no delay. After luncheon on Tuesday the ladies went to Hyde Park, and had tea at Selfridge's, at which but one thing was wanting—Mr. Gordon Selfridge, whom the ladies would have liked to shake by the hand.

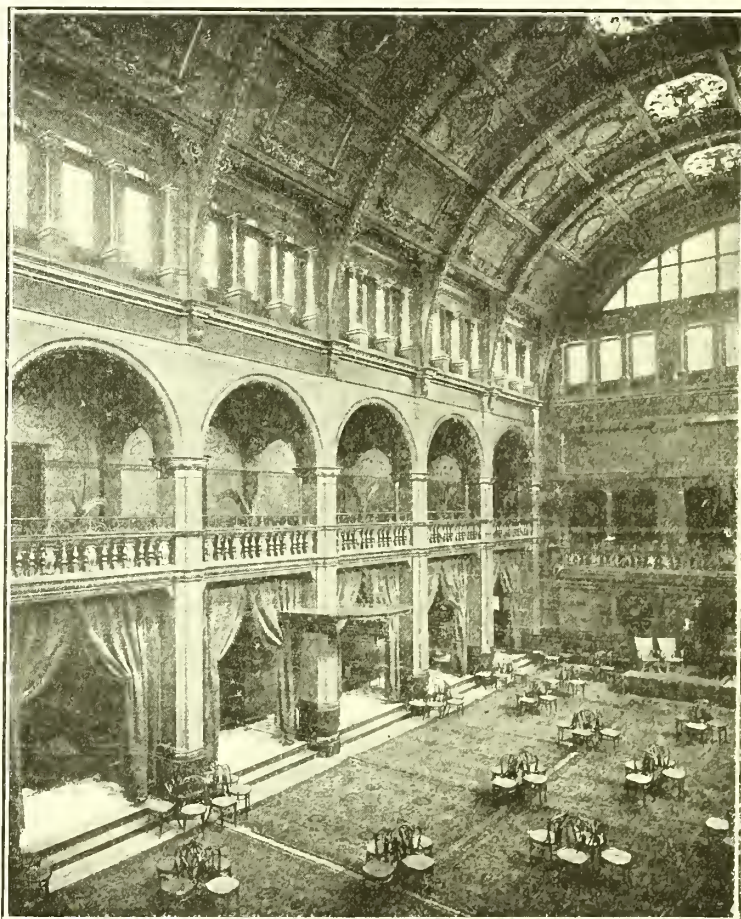
The visit to the Houses of Parliament by the ladies on Wednesday forenoon was much appreciated, even by those who had been there before. Mr. Glyn-Jones had four fellow-members to assist him—viz., Mr. R. A. Cooper, Sir Francis Edwards, Mr. Walter Rae, and Mr. Harold F. Cawley (a member of the Patent-medicine Committee). The party was divided into five groups, each of these gentlemen conducting one, and well they did it, judging from the grateful appreciation of the ladies. They were shown everything—even "Cromwell's death warrant," we were told—but we fancy that it was his predecessor in respect to whom something of the kind was written. Anyway the visit was a treat, and the parties were full of enthusiasm about it all.



Facsimile of Programme-cover, which was printed in colours and gold.



THE GUILDHALL.
From a plate in the Programme.



KING'S HALL, HOLBORN RESTAURANT.

Here the Luncheons were held daily, the Dinner on Tuesday evening, and the Smoking concert on Wednesday evening.

Afterwards the motor-buses took them a drive round the West-end. Meanwhile the thirty who were fortunate in getting tickets for the Mint were inspecting the money-making establishment, and the process carried some of them beyond luncheon time. By the way, that necessary meal was again well done, and, as on Tuesday, each table bore liberal supplies of Beaune and Chablis with aerated waters, this being done by the committee to avoid the delay that generally follows "Your orders, gentlemen!"

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THE LADIES' LOCAL COMMITTEE: A PRELIMINARY SNAPSHOT.

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The smoking-concert on Wednesday evening in the King's Hall was under the supreme charge of Mr. F. W. Crossley-Holland, F.C.S., of whose qualifications in this regard Conference visitors to Portsmouth and Edinburgh have already had a taste. Mr. Crossley-Holland has for many years been serving the Chemists' Assistants' Association well by his direction of social events, and he has recently been elected President of that body. He is head of the representative staff of Messrs. Menley & James, Ltd., who find his pharmaceutical skill and knowledge of special service to them in the development of their specialties. Each one present on Wednesday evening received a programme, which we append in abbreviated form:



MR. CROSSLEY-HOLLAND.

THE GALEN THEATRE OF VARIETIES.

Performances once yearly. Complete change of programme.

JUBILEE PERFORMANCE, JULY 23, 1913.

Times and prices as usual.

Acting Manager	...	...	...	Mr. R. R. BENNETT.
Stage Manager	...	...	...	Mr. F. W. CROSSLEY-HOLLAND.
Assistant Stage Manager	...	...	...	Mr. THOS. STEPHENSON.
Deputy Assistant Stage Manager	...	...	...	Mr. R. E. LOWNSBROUGH.
Deputy Acting Assistant Stage Manager	...	...	...	Mr. W. BROWNE.
Costumier	...	...	...	Mr. T. A. WHITE.
Perruquier	...	...	...	Mr. T. O. BARLOW.
Chef d'Orchestre	...	...	...	Mr. WALTER MORRICE.

The aim of the proprietors of the Galen Theatre of Varieties—B.P.C., Ltd.—is to provide their patrons with opportunities for applause.

Should any members of the audience deem any performer satisfactory, will they lodge a complaint with the Acting Manager.

To ensure the safety of the artists, an egg-proof screen is in operation.

PROGRAMME.

The following and several other distinguished Artists will appear:

Mr. R. D. GRANT

In Resonant Song: Special Engagement.

Mlle. MADGE NEWELL

Direct from her Italian Tour of Song.

Signor ROLAND MARSHALL

The Rising Baritone.

Mr. ROBIN E. LOWNSBROUGH

The Elegant Eloquent Elocutionist, in all his Latest Successes.

TOM STEPHENSON

Scotch Comedian, in Topical Melody. Welcome Return Engagement.

Mme. ARROWSMITH
In Melodic Song. First appearance at this house.
Messrs. CROSSLEY-HOLLAND AND STEPHENSON
In a Spiritistic Episode. Mystic: Mysterious: Mystifying.
(All exits will be open during this turn.)

Mlle. ALICE WALKER
And her Violin.

Mr. MURPHY

In Song and Story: Starring Engagement of this famous Raconteur.

JOSEPH TAIT

The Scottish Warbler. Direct from the Edinburgh Galen (our Branch house).

Sir Edward Evans, the ever-popular chairman at these gatherings, again officiated in his best manner. In the course of the evening he received repeated messages or crosanomygrams, which would have made the Chevalier's hair lie down. Only those attending the meeting could fathom some of them; but none of our readers should die of the operation that may be necessary for infusion of the following:

From Lloyd George to Mr. Woolcock: "Respectful homage; thought I was the champion spoofer, but I take my hat off to you."

From Mr. F. Bascombe to Mr. Gulliver: "I am publishing a new book entitled 'Gulliver's Travels around the Buffet.' Send me your photo for frontispiece."

From the Lord Mayor of London (Sir David Burnett) to Practice Section: "Have read your discussion on Food and Drugs Act: Burnett (Burn it)."

This page is passed for press while the concert is at its height.

A Ryde Pharmacy.

THE accompanying photograph is that of the new pharmacy built for Mr. E. W. Pollard, Ph.C., B.Sc., Ryde, I.W., which was recently visited by our representative. It occupies a corner position in the centre of the business portion of the town. For forty-five years Mr. H. H. Pollard had premises immediately opposite, but these were no longer suited to the increasing demands of the business, especially the optical and photographic departments. The whole of the work was designed and executed locally. The exterior is of teak, plain varnished, with green tiles underneath, the fascia being gold on myrtle-green. The brilliant cut and frosted glass below the fascia is added to give the appearance of greater height than the interior really is. The interior is of mahogany



throughout. The window enclosures extend to the ceiling, and are formed by large plate-glass doors, plain, save for ornamental frosting at the base, so that the whole pharmacy, excepting the back counter, is exposed to the public view. These doors open in pairs and close together in dustproof semicircular grooves. The whole of the windows can be exposed at the same time, which facilitates access for dressing. Ample space for serving and dispensing is provided by a clear 3-feet space behind all counters. Mr. Pollard has used the back premises to great advantage, the facilities including a photographic dark-room. On the first floor is the laboratory, which is equipped for the testing and manufacture of galenicals on a small scale, as well as analytical work.

INFORMATION DEPARTMENT

For Supplying Names and Addresses of Manufacturers of or Agents for Goods.

Addresses { Postal: C. & D. Information Department, 42 Cannon Street, London, E.C.
Telephone: Bank 852 (two lines). Telegraphic: Chemicus Cannon London.

INFORMATION WANTED.

Would any reader who knows please inform us by postcard or telephone of the names and addresses of the agents or makers of the articles mentioned in the following inquiries:

- 150/61. Hydroform: supply.
136/6. "Vitona": suppliers.
149/51. Beyzl's tablets: supply.
149/35. "Therino" (for a burn).
147/280. "Ethalie" marking-ink.
140/27. Sype's Japan oil: supply.
133/2. Steadman's syrup: suppliers.
136/4. "Climax" soothers: makers.
149/39. "Dolphin" soothers: supply.
139/34. "Quinia" hair-dye: makers.
149/350. Raine's "Bronchia": makers.
144/53. Russell's "Veneerine": makers.
147/282. "Rose Valodora" tooth-powder.
142/3. Rose d'Asie Crème Savon (shaving).
149/34. "Pezzo" (not Pazo) ointment in tubes.
147/283. "Kaki Blanco" (not white): supply.
144/56. "Pulmotor" oxygen apparatus: makers.
147/28. "Fairy Brush Application" for neuritis.
149/40. Llewellyn's manicure toilet preparations.
146/15. "Schiavonea" liquorice-juice: importers.
146/64. Todd's "Wine of Glycerine": makers or agents.
149/42. "Saxoline Jelly" (for a South African prescription).
145/22. "Bula Matadi"—a proprietary medicine: who sells?
147/281. "Homeuare" sponge-holders (Axtens Regd. No. 566356).
143/57. Dr. Eisenbach's sterilising tablets: makers or supply.
150/6. Makers of "Cleaning Pads" (shaped like a flat menthol cone).
142/23. Davis's "Strengthening Pills" (makers formerly at Eastbourne).

INFORMATION SUPPLIED.

During the past week we have answered inquiries as to where the following articles are obtainable wholesale. We shall be glad to repeat the information to others who send to this Department a stamped and addressed envelope for the purpose.

- Acide chlorhydrique (for Egypt), 139/62
"Adalin" tablets, 146/61
Adamon, 144/25
Aldoform tablets, 139/35
Aluminium articles, 147/25
Aluminium pill-boxes, 137/39
Antiperiostin, 142/29
Arheol capsules, 136/68
"Arun Lily" perfume, 138/17
A. S. Hind's honey-and-almond cream, 139/330
Asepturin, 142/29
"Atlas" preservative, 144/73
"Aura" cream, 148/14
Automatic weighing and packing machines for Seidlitz powders, 150/65
Battle's bromidia, 148/13
Beach's cattle-foods, 142/3
Bendle's meat-port, 139/7
Biocitin, 130/64
Boracic soles, 128/66
Blondeau et Cie's specialties, 134/41
Cachet apparatus (for Buenos Aires), 142/1
Caloris vacuum flask, 133/2
Camel-hair pencils, 150/66
"Canthos" plaster, 133/43
Capern's thrush tonic, 147/280
Carbolineum Avenarius (export), 144/73
Cardamoms (for Japan), 135/64
Castols, 137/32
Charmides toilet preparations, 138/26
Cherry-juice (importers), 146/66
Clark's (Dr.) preparations, 145/43
Corona medicator, 145/56
"Cosma" feeding-bottle, 149/33
"Cow and Gate" brand sugar of milk, 148/10
Cystopurin tablets, 137/7

- "Electrozone" disinfectant, 140/64
"Empire" corn-silk, 147/285
Esanopheles, 147/7
Euca-Pyne, 134/16
Fenalia, 142/28
"Gem" menthol inhaler, 140/7
Gentian-root (for the Far East), 135/64
Glycogenol, 148/11
Hearsey's mixture for black-water-fever (bi-palatinoids), 137/19
Herring's preparations, 136/66
Homatropine, 142/300
"Homo" preparations, 140/52
Ice Cologne, 142/302
Intenol, 129/49
Iodosal, 138/20 and 149/36
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OBSERVATIONS AND REFLECTIONS.

By Xrayser II.

Dispensing-fees

on proprietary preparations are still causing trouble in connection with the pricing of Insurance prescriptions, but it seems to me that some pharmacists are making mountains out of mole-hills. Where unbroken proprietaries are prescribed and where a profit calculated at the tariff rate is charged, which, of course, ought always to be done, a dispensing-fee is, in my opinion, quite unnecessary. Where, on the other hand, bulk is broken the proprietary will, in the great majority of cases, form one ingredient in a prescription, and here, naturally, the dispensing-fee will be charged. If we stand out for dispensing-fees where already the profit is relatively considerable, and where the time and labour involved are insignificant, my fear is that we shall damage ourselves in the eyes of Insurance Committees. I am interested to notice that the Lancashire Committee have taken a very sensible view of the proprietary question, since they specifically permit doctors to prescribe for panel patients just what they have previously been in the habit of prescribing, the only stipulation being that packed proprietaries are barred. I should not be surprised if this view sooner or later becomes universal.

The Cultivation of Medicinal Plants

that you refer to as having been introduced in recent years by certain American universities and wholesale drug-houses is not quite on all-fours with the scheme advocated by Sir Edward Evans in his Conference Address a year ago. So far as we here are concerned, the ground is pretty well occupied as regards the indigenous medicinal plants most in demand, and we have no room for complaint of want of energy on the part of our large herb growers, distillers, and extract manufacturers. There is therefore no call for any public authority stepping in with a view to subsidising what is already good going business, still less of entering into competition with it. Much more important is the possibility of extending the area of production of tropical and other medicinal plants, and in this direction the Colonial Office could be of immense service by initiating and fostering the cultivation in our own Dominions and Colonies of the great majority of important plants that are at present grown in foreign countries.

The Rise in the Price of Soap,

just announced, has been expected for some time, the steady appreciation of oils and fats rendering some such step absolutely necessary if soap-boilers were to make any profit at all. The advance in values is, I suppose, traceable to the increasing demand for edible fats in the manufacture of margarine and butter substitutes generally. The mention of soap leads me to comment on two items of news that appear almost side by side in your last issue—namely, the increase of the capital of Messrs. Lever Bros., Ltd., to the enormous total of thirty millions, and the reduction of the capital of the United Alkali Co., Ltd., from three millions to one-fifth of that amount. Whatever be the explanation of the latter proceeding, it is sad to see old-established concerns, which in the past made fortunes for their founders, falling on evil days, while newer companies appear to be abounding in prosperity. In the case of Levers the increase of capital is no doubt due to the expense involved in the exploitation of the immense tract of territory acquired by the company in the Congo, the possession of which, with its unrivalled facilities for the production of vegetable oils and fats, will enable Sir W. H. Lever to dominate the entire soap industry of the world, and I shall not be the least surprised to hear in a few years of still further absorptions and amalgamations. So long as Sir William Lever is able to control the machine he has created, I have no fear of the result.

"Historicus"

writes in a reasonable tone and with admirable temper, and I thank him for his reference to myself; but it is curious that, adopting the pseudonym he does, he should deliberately ignore the historical aspect of the subject he discusses. "The events of the past" condition the present; they both explain and justify our attitude towards the unregistered man, and they explain, too, the disabilities under which he labours, and for which he has himself alone to blame. I write in the interest of no Society and of no class; I simply stand on the preamble of the Act of 1868, which declares that it is desirable not only that chemists should possess certain qualifications, but that in proof of possessing them they should pass certain examinations. These examinations we have submitted to, and he has not; if he wants to be in the same position as we he must pass them, and there the matter ends. It may be arguable that the Irish Acts are framed on better lines than ours, that there is room for an inferior class of

Registered Druggists,

but your correspondent, if his letter has any relevance to the situation, claims more than the Irish Acts would give him; they do not allow Registered Druggists to dispense medical prescriptions, which is precisely what our unregistered men want to do. Despite the Pharmacy Acts, they have contrived hitherto to carry on a profitable business in drugs, thereby depriving us of much of the benefit we had hoped to receive in exchange for our submission to the requirements of the Acts. Hitherto, again, thanks to the doctors, many of us have done very little more dispensing than they. Now we are coming into our own, the work for which we have been qualifying ourselves, and they claim to share it with us. I hope I write without prejudice, certainly I do so without bitterness, and, replying to one who admits so much, I ask him with some confidence to admit a little more—namely, that it is unreasonable to expect the Pharmaceutical Society, to "close its ranks for all time" by treating unregistered men who are in business for themselves at all differently from the hundreds of equally competent men who are acting as assistants to pharmacists. But to admit that is, of course, to give away entirely the case of the drug-store proprietors.

Apollo

is the god of medicine as well as of song, and our new Poet Laureate, Dr. Robert Bridges, is doubly his votary in being both a poet and a doctor. The profession of medicine has in times past given us many eminent men of letters and not a few poets. Chief among the latter undoubtedly is Henry Vaughan, although he is by no means the best known. I well remember hunting for a copy of his "Silex Scintillans" (the book in which his best work is contained) in 1867. It had then only been reprinted once since its first appearance in 1650, and of the reprint only very few copies remained in the shops; I got one at last, at a greatly enhanced price, from the publisher. Next after him should perhaps be placed the unhappy Beddoes, though doubtless Crabbe and Goldsmith would by many be placed above him. Akenside is still honoured as a poet; Garth has an inferior but admitted right to the title; Armstrong and he are included by Professor Ward in his monumental anthology; Blackmore is not, but he claims mention as a writer of six epics in sixty books, as well as by having been Court Physician to Queen Anne. Byrom, like Keats, studied medicine, but did not, I think, practise; his verse is hardly poetry, but it is very good stuff for all that, and may still be read with both pleasure and profit. Mr. Bridges is the first of his profession to have attained the dignity of Poet Laureate, and not more than three or four of his predecessors have been worthier of it than he.

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Editorial Articles.

Insurance Act Amendments.

MR. GLYN-JONES has again undertaken a good move for the trade in the clause which he proposes, Dr. Addison supporting, to establish Local Pharmaceutical Committees under the Insurance Act. The effect of this would be to put panel chemists on a similar footing to panel doctors as regards facilities for speaking for themselves. He is also associated with Dr. Addison in two amendments to the Medical Benefit clause (5). His new clause may, and will, do much if enacted, but all that we want to say at present is that chemists should use such influence as they have in Parliament to support Mr. Glyn-Jones.

The Jubilee Meeting of the British Pharmaceutical Conference.

THE celebration of the Jubilee of the British Pharmaceutical Conference is the pharmaceutical event of the week. It commenced splendidly in the Guildhall on Monday evening, as reported on another page. On Tuesday morning, shortly after 10 o'clock, Mr. John C. Umney, the President of the year, rose to address a meeting of over 400 men and women who were assembled in the Throne-room of the Holborn Restaurant. Mr. Umney was supported on the platform by the largest number of past-Presidents we have ever seen present at one time, including S. R. Atkins, G. Claridge Druce, Sir Edward Evans, E. M. Holmes, T. H. W. Idris, W. A. H. Naylor, Francis Ransom, Thomas Tyrer, Charles Umney, and W. F. Wells. Mr. Edmund White, President of the Pharmaceutical Society of Great Britain, and Sir William Baxter, President of the Pharmaceutical Society of Ireland, also supported him, the former welcoming the members to the Conference, and the latter congratulating the members upon the glorious achievement of their Jubilee.

The President

did not disappoint the members by selecting for his Presidential Address the subject which might appear most obvious to some—the history of the Conference. He chose rather to give expression to views in regard to the revision and publication of the British Pharmacopœia which have been maturing since assistance in the revision of the 1898 edition was given by the Pharmaceutical Societies through the appointment of members of the Committee of Reference in Pharmacy. Mr. Umney is a leading member of that Committee, and spoke from personal knowledge of what it has done, and what the 1914 edition of the British Pharmacopœia is likely to be. His opinion is that pharmacists of this country will never again, on present conditions, assist the General Medical Council in this work, and he put forward a draft Bill for the amendment of the Medical Acts, to provide for the appointment of a Pharmacopœia Commission, consisting of medical men, pharmacists, chemists and a legal expert, which would be entrusted with the preparation and publication of a British Imperial Pharmacopœia. Colonial and Indian as well as Home interests would be represented on the Commission, and Parliament would provide the money. Mr. Umney proposes that the Bill should be introduced under the aegis of the Privy Council, and makes suggestions as to how this might be done. The Bill is, of course, a draft, subject to consideration and modification before introduction, if need be, but the present is not the time to discuss that in these pages. The supreme fact is that the President's declaration on this subject is timely, besides being a subject worthy of the jubilee of a pharmaceutical body which has done more than any other during its existence to assist in improving the Pharmacopœia. Pharmacists know that the statutory basis of the British Pharmacopœia was formulated before pharmacists had State recognition in regard to their qualifications as compounders of medicine. Now that they are so recognised, Mr. Umney urges that there should be no delay as to seeking equal rights with medical men in revising the formulæ and standards of the Pharmacopœia. The argument is admirably expounded in the Address, and in these observations we assume that it has been, or will be, read, so that we do not attempt to summarise the parts which led up to the demonstration

that pharmacists have in the past been wheedled. We now know that if the Pharmaceutical Society's three professors had not gone to the assistance of the General Medical Council thirty years ago, when the Society's Council was advocating substantially what Mr. Umney has done this week, the matter might have been settled then; at least, it would not have had the set-back which it has had. Most of those who at that time strongly advocated statutory rights for pharmacists in Pharmacopœia revision have passed away, and the matter has in the interval been glossed over so as to establish a semblance of harmonious relations between the General Medical Council and the representatives of Pharmacy. Mr. Umney's Address is like the bursting of a volcano: it is certainly a big surprise to the medical profession, perhaps also to those pharmacists who think that they can get all they want by diplomacy. Not in this matter, we say. As long as the present statutes exist, so long must pharmacists be the bottom dog. Diplomacy! Did not Professor Atfield start it immediately after the 1885 B.P. fiasco, and did it not go on until he fancied that the Committee of Reference in Pharmacy meant success? We have now this declaration of failure from within the Committee, and it remains to work as quickly as possible, and in as friendly a manner as the circumstances permit, for a radical alteration of the statutory provisions appertaining to the Pharmacopœia.

The work of the Jubilee meeting of the Conference, so far as communications are concerned, was, as on two previous occasions, divided into two sections—Science and Practice. We take

The Practice Section

first because it so admirably demonstrates the need for some such reform as the President advocated. The subject of the debate in the Section was the incidence of the Sale of Food and Drugs Acts upon pharmacy in practice, and the four contributors demonstrated that the standards of the British Pharmacopœia are paramount in respect to the sale of medicines. The discussion was opened by Mr. H. Wippell Gadd, who spoke as a lawyer, and was followed by Mr. C. A. Hill as a wholesaler, while Mr. J. P. Gilmour presented the retailer's view, and Mr. Edward Hinks the public analyst's.

Mr. W. S. Glyn-Jones, M.P., presided at the meeting.

After the reading of the four papers in abstract by the authors, sixteen subsequent speakers were allowed five minutes each, and the Chairman summed up with an interesting speech in which he forgot to state how, when a similar subject was brought before the Conference meeting at Plymouth in 1899 by Messrs. Moor and Cribb and discussion was suppressed, he had protested that the communication was the paper of the meeting, and he then expressed the disappointment of many members that they were not allowed to speak upon it. Tuesday afternoon's experience proves that the subject is still of great interest, although very little that is new was said in the course of the discussion, but as amending legislation on the Sale of Food and Drugs Acts is long overdue, it is likely that the discussion will be of great service to the drug trade when their case has to be presented to Parliament.

THE PAPERS

communicated to the Science Section have in some cases been unconscionably long, and if each contributor had read his paper in full it would have been necessary to prolong the meeting for several days. We sometimes wonder if it is necessary for all authors to pour their laboratory note-books before the Conference, which is

literally what some of this week's papers suggested. By Presidential guidance the communications and discussions were started on a compressed scale, and this helped to win through.

Normal Opium

for pharmaceutical purposes is, according to Professor P. van der Wielen, one that contains average amounts of at least three alkaloids—morphine, narcotine, and codeine—for the physiological action of opium is not due to morphine alone, therefore standardisation according to the morphine-content is wrong. The Professor gave a process for evaluating the alkaloids based on the colour produced by the meconic acid present, thus recalling Dr. Andrew Ure's observations eighty years ago. Recent reports (*C. & D.*, May 31, index folio 834, and June 7, index folio 885) show that Continental authorities are paying close attention to this question of having opium normal as regards all its active principles (all varying just as the morphine does), and this paper by Professor van der Wielen endeavours to satisfy the new requirement by showing that if a powdered opium is prepared by mixing four opiums of different origin without the addition of an inactive drug, the chance that the opium will have about the same activity is much greater than if it is made from opium diluted with sugar of milk or starch to contain 10 per cent. of morphine.

Myrrh of Commerce.

Mr. Holmes informed the Conference that the Hebrew word "lôt" in Genesis refers to labdanum, not myrrh, while the Hebrew "môr" in the Psalms is the perfumed myrrh of the East. In regard to medicinal myrrh there was new information regarding Somali myrrh gleaned by Mr. Holmes through Dr. Drake Brockman.

Wheat Germ.

In the account from the Wellcome Chemical Research Laboratories of the investigation by Drs. Power and Salway of the chemical constituents of wheat germ, not a word was said about standard bread. The authors confirm the occurrence of sitosterol, choline, betaine, allantoin, cane sugar, dextrose, and raffinose in wheat germ, but did not detect asparagine as recorded by Frankfurt. They show that the fatty acids in it are palmitic, stearic, and linolic acids. A small amount of amorphous glucosidic material was obtained, as well as 0.04 per cent. of resinous material and a very small amount of sinapic acid, which has hitherto only been known to occur in mustard-seed, or at least in the family of *Cruciferae*. It is highly probable that it occurs in wheat germ as a choline ester.

Soya Bean

has been examined in histological detail by Mr. Wallis. This author told the Conference that the remarkable twin crystals of calcium oxalate are the best diagnostic characters for detecting soya-meal in other powders.

Thyroid Gland.

Further territorial information regarding the nature of these glands was given in the paper by Mr. Glode Guyer. This shows that there is great variation in the weight of the glands derived from the sheep in the Edinburgh market, and although the monthly average steadily increases to a maximum in May, the author believes this to be more of a coincidence than a real factor. The ratio of dried to moist glandular substance comes out at 1 to 3.6, this being in close accordance with the figures submitted by Mr. N. H. Martin at the Conference meeting last year. The iodine-content supported the suggested standard of 0.2 per cent., but Mr.

Guyer deems that it might be misleading to fix a factitious factor until the therapeutical value of the iodine in thyroid gland has been settled. Mr. Martin also communicated a note in which he carried his observations further. In this paper he continues the series of statistics provided at last year's Conference regarding thyroid glands from the Newcastle area. There is little variation in the annual average percentage of iodine-content in the fresh thyroid, although in the dry product it was somewhat higher in the second of the two years. Mr. Martin points out that a standard of 0.25 per cent. would not be difficult to maintain in the district referred to.

Male-fern Extract

has been examined by Mr. C. A. Hill, and he finds that the proportion of "crude filicic acid" is of first importance for evaluation purposes, this factor, in conjunction with other chemical and physical constants for the genuine product, being the best safeguard against adulteration. Mr. Hill gives 20 per cent. as the fair minimum and 22 per cent. as the fair average of crude filicic acid. He states that the specific gravity is usually higher than 1, and the refractive index should not be below 1.49. These constants are in close agreement with those suggested by Parry, but a limit of insoluble in petroleum ether of 20 per cent. is given against "nothing but a little flocculent matter" insoluble in petroleum ether by Parry. The paper recommends the assay process of the Swiss Pharmacopœia for the determination of crude filicic acid. On the other hand, Messrs. Harrison and Self examined eleven samples made by themselves from genuine rhizome, and they reported that the limits proposed by Parry for the constants of this extract would have excluded all these, and five of the products of the six principal makers in Germany would likewise have been rejected if Parry's limits were adopted.

Essential Oil of Witch Hazel

was distilled by Drs. Jowett and Pyman. It had a golden-brown colour, sp. gr. 0.900, and opt. rot. (100 mm.) 4.29°. The chief constituent is a sesquiterpene having sp. gr. 0.8970, opt. rot. + 14.88°, and ref. ind. 1.4916. A trace of a phenolic substance, a mixture of fatty acids in the free and combined state, and a mixture of solid saturated hydrocarbons were also isolated, while indications of the presence of other compounds, including oxygenated substances, were also obtained. The results generally agree with those previously recorded by Scoville.

Ergot and its Preparations.

The paper by Mr. Carr and Dr. Dale on this subject is exceptionally good, in so far as the authors showed that the *rationale* of the preparations is all wrong, as known facts in respect to the active principles of ergot are ignored in the processes, except in the case of ext. ergotæ fluid, U.S.P. They suggested that the B.P. should adopt that process, and abandon the other preparations.

Hypophosphites

was the subject of a paper by Messrs. Cocking and Kettle, who show that potassium dichromate is admirably adapted for the rapid assay of metallic hypophosphites after removal of any phosphite by means of lead-acetate solution. The presence of lead does not affect the results, which are in accordance with those obtained by the more elaborate methods of Jowett and Rupp and Kroll. An examination of various commercial hypophosphites

showed the acid itself and the calcium salt to be fairly satisfactory. There was considerable variation in moisture-content with the sodium salt, while specimens of manganese and ferric hypophosphites contained considerable amounts of impurities. Ferrous hypophosphite consists of a varying mixture of ferric and ferrous salts, and is accordingly very unsatisfactory.

Rhubarb

was investigated by Messrs. Brewis and Deane to determine what would be a fair standard for extractive matter. They find that the minimum of 35 per cent. in the air-dry drug required by the German Pharmacopœia seems to be reasonable. Other noteworthy points emanating from the research are that the ash limit of 12 per cent. suggested by the Committee of Reference in Pharmacy would exclude nearly all the powdered rhubarb of commerce, and that any lignified tissue staining red with phloroglucin may at once be put down as matter extraneous to genuine rhubarb.

The Alleged Poisonous Honey

yielded by *Datura Stramonium* is a theory exploded by Mr. Deane in his note to the Conference. This shows that the statements in modern reference books emanate from the erroneous surmise of the British Consul at Trebizond over thirty years ago.

Tablet-making

from the retailer's point of view was dealt with by Mr. P. G. Chamberlain, who described the apparatus used and the methods which he employs in his own business. He does not favour the use of special excipients, and considers that "picking" and "capping" as causes of trouble in tablet-making have been grossly exaggerated.

Formates

were investigated by Messrs. Hampshire and Pratt, who find that the B.P. Codex is generally at fault in regard to the formulæ assigned to these. An interesting observation is that sodium formate crystallises in the anhydrous condition or with two or three molecules of water of crystallisation according to the temperature of the mother-liquor. A method of making ferric formate is suggested. As regards quinine formate, the basic monohydrate is the most stable. The use of anhydrous strychnine formate is recommended. Examination of commercial samples of formates showed that these were generally of fairly good quality with the exception of calcium salt.

Sodium Thiosulphate Solution

was investigated by Messrs. Hampshire and Pratt in respect to stability, and they found that seminormal and decinormal solutions do not undergo change in titre after keeping eight months, even when exposed to daylight.

Determination of the Citronellol

in geranium oils by means of the formylation process was the subject of a paper by Mr. W. H. Simmons, who showed that the method has its limitations; but he considers that it is likely to be of considerable utility in judging geranium oils. He gave some useful factors in respect to oils from different countries.

Mercuric Oxide as a Standard

for volumetric analysis is ably brought forward in the paper by Professor L. Rosenthaler and Mr. A. Abelmann. It is shown that this chemical possesses the properties most desired in a

standard substance, and can be used to standardise solutions of acid, iodine, permanganate of potassium, and ammonium sulphocyanide.

Polenske Values

for a number of the more important vegetable oils were given in the paper by Messrs. Elsdon and Hawley. This value is not so variable for different specimens of the same oil as the Reichert figure is.

Discussions on the papers were, as a rule, much to the point, and less verbose than usual, which facts account for our reports of them being more concise than usual. The meeting concluded shortly before four o'clock on Wednesday afternoon, the Conference having accepted an invitation to meet in Chester next year. Mr. E. H. Farr, of Uckfield, was appointed President in succession to Mr. J. C. Umney. The proceedings closed amid a scene of great enthusiasm manifested by the members with regard to the Local Committee, the Ladies, and the President, who have contributed to the success of the Conference.

PRESCRIPTION PROBLEM.

THERE was a good response to the problem in prescription-reading which was set in our issue of June 28. The 789 postcards received are evidence of the interest taken in Insurance dispensing. When it is considered that the competition is open to everyone in the drug-trade, it is gratifying to be able to state that less than a hundred of the competitors were unable to read the prescription correctly. The correct transcription is:

Mist Carmin ʒviij.
ʒss. t.d.s. p.c.
Cal gr. iij. nocte

The mist. carminativa is given in some local Insurance formularies. Thirteen varieties are given in "Provincial Hospital Pharmacopœias," and the particular one to be used would depend upon local circumstances. This item was taken by some of the competitors to be intended for mist. conii; mist. guaiaci; mist. communis; mist. colchici; mist. ammon.; mist. cascara; mist. quinin.; or mist. cretae. In this competition we require the prescription to be transcribed exactly as written—a point which is lost sight of by some of the competitors—and we received 271 replies correct in every detail. This had made it necessary for us to take into account the time of posting, and as a result the awards are made as follows:

London District.—Mr. C. E. HADFIELD, 106 High Street, Barnet, and Mr. JOHN S. P. WESLEY, Ealing Road, Wembley.

Provinces (England).—Mr. H. HAZEL, 2 Rumford Street, Liverpool, and Mr. C. A. COLES, c/o Coles & Hutt, Ltd., Weymouth.

Scotland.—Mr. L. H. HARPER, c/o Cockburn & Co., Ltd., 98 Queen Street, Glasgow.

Ireland.—Mr. W. CORRIGAN, Medical Hall, Celbridge.

We shall be obliged if the successful competitors named above will let us know which of our books published at not more than 5s. they select as a prize.

PATENT MEDICINES have found a ready market in Yunnan, China, and the import has risen from 39,925 Haikuan taels in 1910 and 46,350 Haikuan taels in 1911 to 65,356 Haikuan taels in 1912. Various Japanese and other patent remedies, widely advertised on posters and in the local Press, find great favour with the Chinese.—*British Consular Report.*

RADIUM.—The London "Standard" reports that an extraordinary demand has developed recently for British radium. Several German agents have visited London with an appeal for eight times the quantity they were able to obtain, and paid cash for same. The price of radium (says the "Standard") is 16,000*l.* per gram, or the equivalent of about 480,000*l.* per oz.

NOTES ON NOVELTIES

and other trade matters

"KATA" THERMOMETER.

Mr. James J. Hicks, 8, 9, and 10 Hatton Garden, London, E.C., has just brought out an instrument devised by Professor Leonard Hill, known as the "Kata" thermometer, or comfort-maker. It consists of two large-bulbed spirit thermometers, one being a wet-bulb instrument, which are empirically graduated so as to indicate the condition of the atmosphere best calculated to promote a healthy feeling. This depends upon a combined effect of heat and ventilation. The instrument sells at 21s.

T. & H. SMITH, LTD.

It is an interesting fact that this well-known Edinburgh firm of chemical manufacturers, especially of opium alkaloids and other fine chemicals, have had a London branch since 1848. The original location was in Cheapside, then at 69 Coleman Street for twenty years; next at 12 Worship Street, where it was for over thirty years; and finally the address in 1900 became 22 City Road, E.C., the present premises. From the London branch, with its ample warehouse accommodation, the business of London and the English provinces and the export trade are carried on. Since the incorporation of the firm the business has increased very much.

TUBED PREPARATIONS.

Messrs. Goodall, Backhouse & Co., Leeds, are now making a leading line of toilet and medicated preparations in collapsible tubes, which are finished off in a distinctive style, pretty without being gaudy, and they are offered at a very moderate price. Among the articles tubed are camphor-ice, zinc ointment, vaseline, nit-ointment, Indian syrup, boric ointment, cold-cream, tooth-pastes of various kinds—in fact, every cream or ointment in present-day demand of a non-proprietary character can be obtained from Messrs. Goodall, Backhouse & Co. in this form. They are sent out in three sizes and in dozen boxes, the lid of the box forming a display card whether the box is kept open or shut. Full particulars can be obtained from the firm on application.

"EXTIRMO."

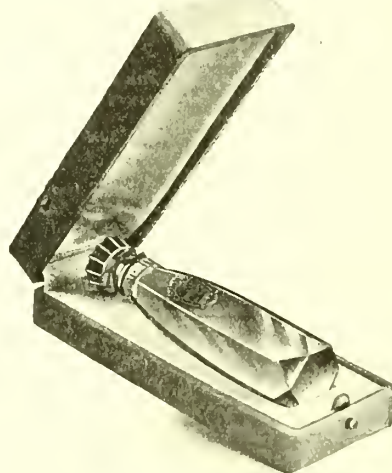
We reported a few weeks ago that the Externa Co., 86 Chiswell Street, London, E.C., had introduced a new vermin-killer which has been met with favour by medical officers of health and others. Since then we have had an opportunity of examining and trying the preparation, which is put up in two forms: A for rats and mice, and B for beetles and cockroaches. Two particularly notable characteristics are exhibited by "Extirmo": in the first place, if eaten by domestic animals it does them no harm, because they vomit it; and in the second place, rats and mice are quickly killed by "Extirmo," and their dead bodies do not lie and rot, because one of the ingredients of the preparation consumes the flesh. In our experiment the skins of the mice that were killed alone were found the morning after "Extirmo" was put down. The preparation is not a virus or anything of that nature, but contains a small proportion of phosphorus, and in respect to this it was brought before the Fire Insurance Offices Committee, who subjected "Extirmo" to severe tests, with the result that they were quite satisfied as to the claims made for it, and that it is absolutely free from danger of inducing fire. The experiences of medical officers of health with "Extirmo" is that the A (yellow label) wipes out rats and mice by the score, so that they quickly disappear from houses. We quote one:

"Extirmo was used on one of my farms (three times): seventy dead rats were found, and the tenant is convinced that many have died and not been found. No harm has resulted to fowls or other stock on the farm; of course, all reasonable care was taken. The dead rats were kept a considerable period, and did not smell."

Similar satisfactory reports have been received in regard to B (green label) for beetles and cockroaches. The preparations are on the P.A.T.A. list, and retail at 1s. to 5s. per tin, showing 33 per cent. profit.

GLORIA PERFUME.

The recent visit of the King and Queen to Lancashire and their inspection of the works of Messrs. Joseph



Crosfield & Sons, Ltd., and the Erasmic Co., Ltd., of Warrington, have been very generally appreciated. It will be remembered that when their Majesties were passing through the Erasmic Co.'s departments they were very much struck with the order and cleanliness which prevailed, and our readers were afforded last week the opportunity of seeing some of the views that were taken during the Royal progress, the Erasmic Co.'s advertisement on page 4 containing five photographs depicting the visit, the centre one being the presentation to Her Majesty, by Miss Willett, of the Erasmic staff, of a casket containing the new "Gloria" perfume which the company has just introduced. A photograph of the actual casket which Queen Mary graciously received is not available for trade purposes, but we reproduce a photograph of a case of the "Gloria" perfume as the public can buy it. It will be observed that the bottle is novel in shape; it is from an old design and the crown-like stopper gives a fine finish. The bottle is enclosed in a case the colour of old gold on the outside, and lined inside with white velvet. The perfume is one of those delicate odours that seem to recall the pleasant things of life. The Erasmic Co.'s London office is at 117 Oxford Street, W., and the perfume may be inspected and sampled there. It promises to be a very popular line. Few modern perfumes have had such an introduction as the "Gloria" has had, and many chemists know how that should help them in selling the perfume.

"THE BLUE BOOK OF THE TRADE."

This does not refer to that amazing document published two or three years ago under the aegis of the Privy Council, but to the annual catalogue of Messrs. F. Newbery & Sons, Ltd., Charterhouse Square, London, E.C., which is now issued in a blue cover, which is remarkably distinctive. It will be ready in about ten days, but we have been favoured with an advance copy in order that we may continue the statistical statements regarding the comings and goings of drug-trade specialities. The catalogue is primarily a "price-book of medicines used in prescriptions, and of remedies, proprietary articles, etc., in

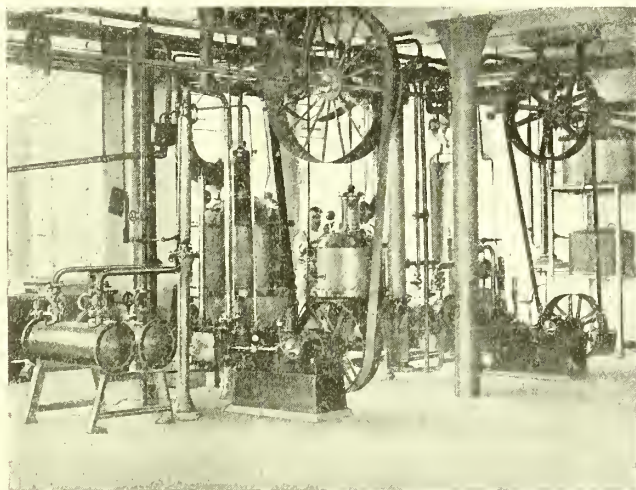
request by the general public," and for the present issue 420 entries have had to be removed and 474 have more than taken their place, while 969 quotations have been modified "appreciably to the benefit of the buyer," say Messrs. Newbery, and they add the following sage statement:

"Advances in the chemical and allied sciences are constantly placing new remedies and preparations at the service of medical practitioners. Whether the new products be 'discoveries' or not, it is for the Pharmacist to dispense what the prescription properly calls for, and the present comprehensive list of such articles—old and new—should prove practically serviceable for daily reference."

As usual, the catalogue contains many things besides quotations for proprietary articles, druggists' sundries, packed goods, Warner's preparations, and other things that Messrs. Newbery have to sell. For example, there are an up-to-date list of proprietary articles containing scheduled poisons; some fresh remarks in regard to dutiable medicines—in short, it is an essential part of every chemist's shop library.

VACUUM DISTILLING-PLANT.

Some months ago one of our staff who had the opportunity of inspecting Messrs. Parke, Davis & Co.'s extended laboratories at Hounslow had his attention called to special vacuum distilling-plants which had been installed by Messrs. Bennett, Sons & Shears, Ltd., 46 Shoe Lane, London, E.C. We are now able to illustrate the apparatus, which is of a nature that is of increasing importance in the manufacture of galenicals. The apparatus is of the most modern and efficient type, being suitable for distilling *in vacuo*, recovering spirit and concentrating infusions and extracts to dry friable powder at low temperatures. The stills are fitted with two receivers, into which the distillate runs alternately and is collected intact without loss of volume or aroma. The receivers are

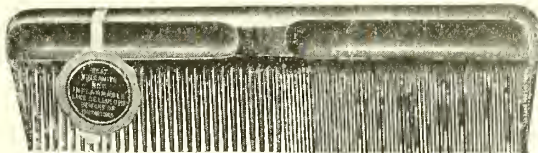


arranged so that the contents of one can be discharged while the other is filling without stopping or interfering with the continuous working of the still. The stills are fitted with dry-air vacuum pumps, which sustain an excellent vacuum. The condensers are of the "Ideal" patent type, which produce their distillate as cold as the cooling water, and auxiliary condensers are also fitted to the pump-suctions of the internal and external water-cooled type known as the "Hit and Miss" condenser, to arrest and condense any spirit-vapour which may rise from the cold spirit in the receivers at reduced pressure.

TRAUN'S "DIAMOND GRIPWELL" COMB.

There seemed little left to be done in the way of comb improvement except perhaps greater consistency in the quality of the material of which it is made, but the small illustration appended is evidence of a very great improvement. This is a comb made of the finest quality of vulcanite by Dr. Heinr. Traun & Sons, of Hamburg,

Harburg, and New York, whose London agency is at 23A Goswell Road, E.C. The firm are old-established manufacturers of vulcanite, and their goods are known the world over not only as regards toilet-articles, but as modern



requirements and technology have extended the uses of vulcanite, this firm's manufacturing departments have grown; still, they retain their well-established reputation in the manufacture of combs, and the "Gripwell" is a recent novelty. Here the back is large, so as to give a good grip to the hand, but the lightness is not thereby diminished, for the back of the comb is, by an original method, vacuous within. The combs are made of the finest vulcanite and are finished with a high polish, so that it is a pleasure to use them. They are made in dressing-comb and rake styles, and are issued with a guarantee to exchange within a year in the event of being broken by fair use. The 8 in. by 2½ in. comb is put up in a box to retail at 3s. 6d. net, the price being protected, and it is good value for the money.

"THERAPEUTIC INDEX."

Under this title Drs. R. & O. Weil, Frankfurt a/Main, issue a descriptive list of their special preparations. The list is in German, English, and Spanish, and describes the following preparations: Veronacetin (a soporific), spasmosan (a lecithin, bromide, and valerian compound), digitoxinum solub., eurespiran (a lobelia preparation), regenerin (ovo-lecithin-ferro-manganese), virilect (preventive of venereal diseases), hycyan (mercury oxycyanide tablets), eubilein (approximating human gall), turiopin (pine pastilles and syrup), arsa-guajacol-turiopin, turiopin concent., menthol-turiopin, lugol-turiopin, Dr. Fragner's Stomachicum, vesculan, droserin (whooping-cough remedy), tanargentan (tannin-silver-albumen), tanargentan suppositories, tanargentan pessaries, and tanargentan bougies. The method of prescribing, the form in which the remedies are presented, and the prices are all set out in the list.

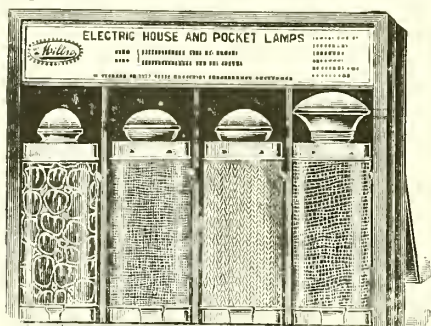
RATIONAL DIETARY

is a matter whose importance gains ground daily, and two of the products of Messrs. Fairchild Bros. & Foster, New York, are of particular interest at this season, when digestive derangements are especially prevalent. Peptogenic milk-powder, an old and tried favourite, in addition to humanising cows' milk and making it suited to the infant's delicate digestion, is a good test for the freshness of the lacteal fluid. Laibose, the milk and cereal food which the firm recently introduced, is growing in appreciation, because it offers to adults a scientifically balanced food in concentrated, yet convenient and specially palatable form.

POCKET ELECTRIC LAMPS.

Messrs. Millard Bros., Ltd., 123 Houndsditch, London, E.C., have just introduced a series of glass showcases of varying sizes for the window or counter display of their electric pocket-lamps, one of which we illustrate overleaf. These cases are made in seven different sizes, the largest being 18 in. by 12 in., and containing a dozen high-class lamps with bull's-eye lenses. The bodies of these lamps are of a superior finish, some being covered in red leather, others in hammered steel, nickel-plated, fancy gilt, and other pretty ornamental designs; the tops and bottoms of the lamp cases are either nickel-plated, coppered, or gilt, and many of them are fitted with the new "trio" push, which can be locked to prevent waste of power and can be adjusted for moment or continuous lighting. A similar

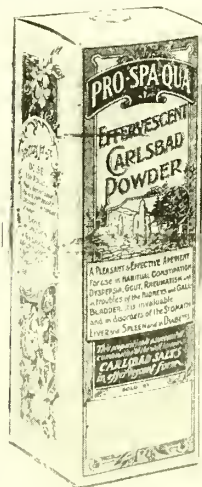
showcase (15 in. by 12 in.) also contains a dozen assorted lamps with oval lenses, and others of the series are adapted to hold from four to six, these comprising lamps useful for libraries, gardens, factories, etc. Torches are also put up in a similarly assorted manner; and even the



ladies are not forgotten, those suitable for boudoir use or for carrying in satchel or wrist-bag being among the "Elite" series (6½ in. by 13 in.). There is a wide selection, sixty-three distinct patterns being available at prices ranging from 1s. 3d. to 27s. per dozen cases. Refills (guaranteed for four months) can be had with every type of lamp, at 3s. 6d. per doz., and less for larger quantities.

EFFERVESCENT CARLSBAD.

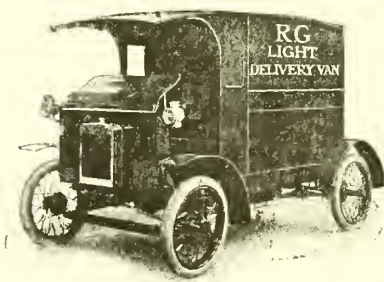
Mr. Robert Blackie, Shen Works, Tower Bridge Road, London, S.E., has introduced an excellent shillingsworth



in the form of an effervescent minutely granular powder containing artificial Carlsbad-water salts, a teaspoonful of which suffices to produce a tumblerful of aperient water equal in medicinal activity to the popular natural water. The package is oblong and neatly printed. It encloses a bottle containing about 6 oz. of the effervescent powder, and it retails at not less than 1s. Mr. Blackie's price being 7s. 6d. per doz. He furnishes all the materials for an effective window-display, including show-cards, ribbon, and a black background, as shown in the prize window which we understand is illustrated in an advertisement in this issue. Our engraving shows the styles of the package.

"R.G." COMMERCIAL MOTOR VANS.

The R.G. Motor Co., Ltd., whose showrooms and offices are at 353 Upper Street, Islington, London, N.,



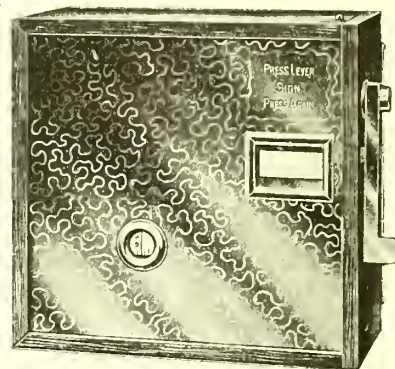
have just placed on the market a new light motor delivery van, which is eminently adapted for houses conducting a wholesale business, and also to act as a feeder where large motor vans are already in use. It carries loads up to half

a ton, and the construction is of British make throughout, special attention being devoted to the chassis, in the designing of which the principal point is the simplicity of the control of the speed-gears, their accessibility and durability. The gear-box is in the centre of

the van-body and is also quickly accessible. The "R.G." is a four-cylinder van of 10 to 12 h.p., all parts being standardised, and therefore interchangeable. It is fitted with Gaulois tyres, and the driver's seat is comfortably upholstered with detachable cushions. The price, ready for the road, with all accessories (lamps, horn, jack, pump, tyre-levers, and tool kit), is 195/-. We may add that although the "R.G." motor is first and foremost a commercial van, it is easily converted into a two-seater for pleasure purposes. The "R.G." Co., subject to certain conditions, give a guarantee to repair and replace and put in perfect working order, free of expense, any part broken or defective, where such breakage or defect is due to faulty material or workmanship. The vans are now on show at Upper Street, and a postcard will bring fuller details than our space allows.

THE "SIGN IT" TIME-RECORDER.

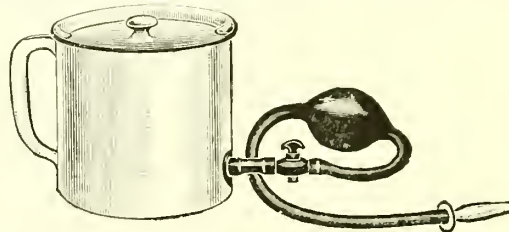
As briefly noted in last week's issue of the *C. & D.*, Time, Ltd., of 48 Dover Street, Piccadilly, London, W., have introduced



a time-recorder for use by employes in offices, factories, shops, etc. The machine is in the form of a square, compact, portable box of solid oak, with brass fittings, is of simple construction and easily worked. It measures 10 by 10 by 5 in., weighs 14 lb. only, and is of British make throughout. The interior mechanism of the case contains an excellent eight-day lever clock with jewelled escapement, and the time is recorded by the employe simply depressing the lever at the side, which stamps the time on the reel of paper; then he signs his name in the slot-window on the lid, and depresses the lever which removes the entry out of sight and again records the time. This duplicate time-stamping ensures against the possibility of an employe writing his name hours before, and arranging for a fellow-worker to "ring him off." There is no limit to its time-recording capacity, and its cheapness (7l. 17s. net) and portability make it eminently adaptable for use in pharmacies where a staff is kept, no time-keeper being required. The "Sign It" can be used for other purposes than staff timing, such as recording and checking the time or delivery and receipt of orders by messengers. Many leading houses have adopted them with very satisfactory results.

CROSSE'S SAFETY ENEMA AND PAN,

which is made by the Fulham Pottery and Cheavin Filter Co., Ltd., Fulham, London, S.W., is designed to meet the difficulty of using an enema with nervous or excitable patients. The nurse, taking the handle of the pan in her left hand and the enema in her right, is able to follow the movements of her patients, however



restless they may be, without danger of spilling the contents. The graduated pan of white enamelled steel is easily cleaned. A special tap controls the apparatus

until adjusted ready for use. The retail price ranges, according to the quality of the enema, from 5s. 6d. upwards.

ANNOUNCEMENTS.

MESSRS. JAMES L. HATRICK & Co., LTD., 70 and 72 St. John Street, London, E.C., have purchased the goodwill of the old-established business of Messrs. Evans & Wormull, late of 31 Stamford Street, S.E.

IN JULY the additions to the P.A.T.A. protected list were: Alienburys' Muscabane and baby soap, Bronnley's tub tablets, Extirmo vermicides, Ingram's adaptable syringes, Nun eau de Cologne, and Peach's toilet-preparations.

CHEMISTS' FRIENDLY SOCIETY.—In returning to guarantors the amounts, with interest, which they contributed to the Guarantee Fund, the manager of this Society, Mr. W. McCallum, states that the Society continues to make satisfactory and steady progress.

JOHN TAYLOR'S TOILET SPECIALITIES are the subject of a special bonus offer in our advertising columns this week. The distributing agents are Messrs. J. C. Gambles & Co., 20 Little Britain, London, E.C. The offer is only open for fourteen days, and merits the careful attention of our readers.

PRICE-LIST.—Messrs. May & Baker, Ltd., Battersea, London, N.W., send us a copy of their July prices current of drugs and chemicals for the wholesale trade. The list extends to 136 pages, and includes all pharmaceutical and technical chemicals at net prices. A useful list of several hundred synonyms and trade names is given at the end.

THE ODOL CHEMICAL WORKS, 59-63 Park Street, Southwark, London, S.E., have started an advertising campaign embracing all the best newspapers and periodicals in the United Kingdom. They wish to point out to chemists that now is the time to supplement their stock of Odol in order to reap the full benefit of the insistent publicity given to this preparation. New and attractive material for window-display will be supplied on post-card request.

"SEMREH" BOTTLE-CAPS.—The Viscose Development Co., Ltd., Pembroke Road, Bromley, Kent, are closing their offices and works for annual holidays on Saturday, August 2, until Monday morning, August 11, and orders for "Semreh" bottle-caps should be sent in good time to ensure delivery. In consequence of orders for No. 2 caps, that particular size will be made during the holiday week to full capacity, but the examining, dyeing, and despatching departments will not be at work.

PERSONALITIES.

Notes for this section sent to the Editor should be authenticated and must not be in the nature of advertisements.

MR. D. McNAUGHTON (James & Co.), Port Elizabeth, Cape Colony, is on a visit to this country.

MR. A. McKELLAR, Ph.C., arrived at Sydney, N.S.W., on June 8, and started work five days later as manager of a business.

THE NAME of Mr. Edwy G. Clayton, F.I.C., F.C.S., has been removed, under the provisions of By-law 15, from the list of members of the Society of Chemical Industry.

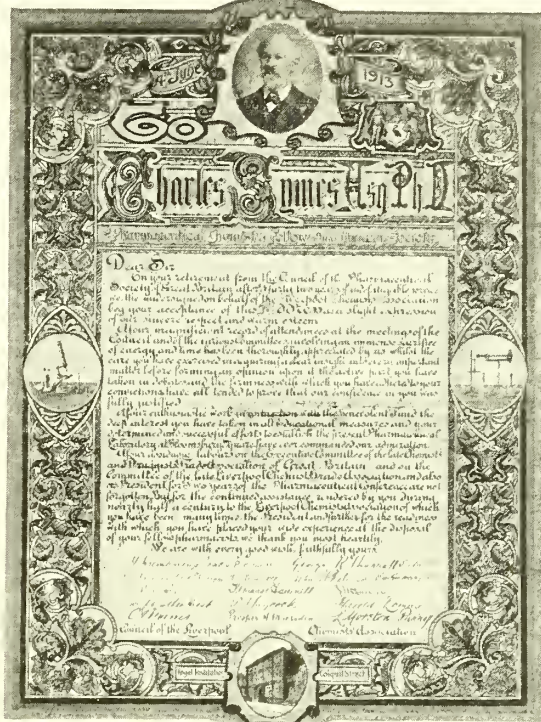
MR. E. J. BROWN, Ph.C., formerly with Mr. W. Duncan, Royal Dispensary, Edinburgh, has been appointed Lecturer in Chemistry in the Port Elizabeth Technical Institute.

MR. R. E. GRIFFITHS, B.Sc., A.I.C., has been appointed Lecturer in Pharmacy, Materia Medica, and Botany at the Battersea Polytechnic, to fill the vacancy caused by the resignation of Mr. C. Edward Sage, F.I.C., who is now devoting his whole time to his analytical practice.

MR. JOB FONG, of the Chung Mei Drug Co., Canton, China, was in London last week on his way East, after having spent some years in the United States,

where he graduated at the Philadelphia College of Pharmacy.

The accompanying engraving is from a photograph of

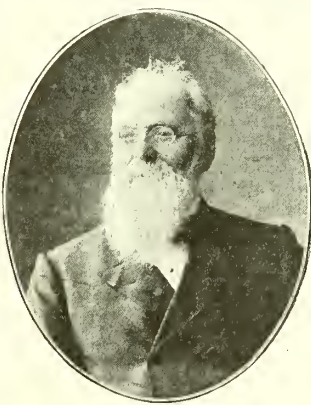


the illuminated address presented by the Liverpool Chemists' Association to Dr. Charles Symes.

To HOW MANY in the drug-trade of Great Britain is this pleasant face known? It was not yesterday when

the present writer as an apprentice first admired the rimless spectacles behind which Mr. Andrew Kinross's eyes twinkled, and still it is a delight to have a "crack" with him now and then about old times, changes in the printing business, in pharmacy, and in "gowf."

—Mr. Kinross wears a medal that he won on Bruntsfield Links more than fifty years ago. Not much of a medal, but it was played for by Edinburgh golfers who finished their rounds in time for breakfast and were at business between eight and nine. Few had more than three clubs, including a putter. Mr. Kinross entered the workshop of Messrs. Mould & Tod, chemists' printers, Edinburgh, in November 1844, as an apprentice lithographer, and he has been working on chemists' labels ever since. He was thirty-five years with that firm, then went south to Newcastle-on-Tyne for a few years, next started in Edinburgh on his own account along with the late Mr. George Black, and since the dissolution of partnership has carried on the business himself. He was one of the first to foresee how counter specialities were to grow in pharmacy, and invented machinery for making collapsible boxes. He has travelled for many years, and when not so engaged is to be seen every business day at St. James' Place, Edinburgh.



MR. ANDREW KINROSS.

SUMMER SUPPLEMENTS

AS becometh the time o' year, the insistent feature in the collection of trade supplements distributed with this issue is brightness. And the studious observer will have noticed that novelty in design and style appears to be unending, and that yearly these insets increase in attractiveness and dignity. Some of them have reached what looks like the high-water mark of typographic display, but the curious thing is that originality in this direction appears to be boundless. It is certain that this inset idea, which originated with *THE CHEMIST AND DRUGGIST* years ago, has had a stimulating influence on the arts of printing, engraving, and publicity in general. The collection this year will give further stimulus to this good work. It is an education in the art of selling goods to run through these beautiful examples; and underlying it all is the fact that the time, care, patience, and money spent on these insets is well repaid by the business obtained. As one of our picturesque contributors, with a taste for poesy, puts it:—

When Fickle Fortune shuns your path,
And all the orders seem to miss you,
The cure is, tell it loud in Gath,
An inset in the Summer Issue.

If one may judge by the persistence with which inset follows inset year after year, our poetic enthusiast may be right. In any case, a careful perusal of the whole of these insets will not only be instructive to each reader of this issue, but will bring him advantage from a pecuniary point of view.

We append a few notes on the main features in these supplements, which will, we hope, whet the appetite for a closer study of the originals.

Allen & Hanburys, Ltd.,

Bethnal Green, London, E., seem to be inexhaustible in their originality in producing elegant insets. This time the golden message "A distinct Style reserved for each Pharmacist" is embossed on a pale grey cover. The result is distinctly *chic*, and prepares one for the beautiful reproductions in colour of the various styles of packed goods shown in the white-paper pages inside. The special preparations pictured, described, and priced include "Extract of Malt with Cod-liver Oil," "Extract of Malt," "Cod-liver Oil Emulsion," "Petroleum Emulsion," "Effervescent Salines," a very fine series of "Toilet Preparations" (such as bay-rum, cuticle-fluid, hair-lotion, lanoline cream, brillantines, face-powder), and an equally attractive list of "Superfatted Toilet-soaps." When it is realised that in the "Extract of Malt" alone there are no fewer than sixteen different styles of packing and labelling shown, the ingenuity and skill in the presentation of these goods will be appreciated. The A. & H. inset enables the chemist to select the style he favours; the prices, etc., are on the opposite page, and all he has to do is to write out the order. Certainly an inset well worthy of its predecessors. (Inserted loose.)

Stafford Allen & Sons, Ltd.,

Cowper Street, Finsbury, London, E.C., and Long Melford, have in the Colonial and Foreign copies a sixteen-page supplement, in which is reflected the high character held by this historic house for the past eighty years. The message to the trade is "The History of Allen's English," and the record is set out concisely and far more effectively than elaborate generalisation would have been. It is shown how "Allen's English" has acquired a special signification because of the sturdy warfare begun eighty years ago, and still waged, against adulteration in drugs. Emphasising "purity of the product" as the basic standpoint, historical notes are given

of the men who have made, and who are keeping up, this high reputation. Then follow chapters describing the steady expansion of the business, leading to necessary extensions at Cowper Street (where there are ninety-one independent power-driven grinding-machines), the absorption of other businesses, and the farms and factories at Long Melford. The illustrations are particularly well done, and they lend an extraordinary interest to the narrative. (Foreign copies only.)

Baiss Bros. & Stevenson, Ltd.,

Grange Works, 174-176 Grange Road, Bermondsey, London, S.E., make "Baiss" the keynote of their communication in an inset of four pages. The name has been familiar to the drug-trade for seventy years, and it still stands for repute throughout the drug-markets of the world in this year of grace. The company specialise in export trade, but of late years they have been giving extra attention to packed goods for home business as well as for export. Some attractive glimpses of exterior and interiors of the factory in Bermondsey are provided, and details are furnished of some of the company's specialities. (Pp. 32 and 33.)

H. Bronnley & Co., Ltd.,

of Acton, London, W., have an inset that will increase the holiday feeling. So realistic is the "Unical" scene that one feels the call of the sea irresistibly, and certainly the desire to sell so attractive and useful a toilet adjunct is no less strong. The reverse of the seascape takes us to the mystic Near East, recalling the haunting quatrains of the celebrated Persian poet, whose privilege it might have been to say:

With "Unical" to soothe the throbbing brow—
And "Omar Khayyam" selling freely, how
Can we but bless the good Courvoisier
Who makes our shop a Paradise enow.

The inset will be found between pp. 32 and 33.

Brunner, Mond & Co., Ltd.,

Northwich, Cheshire, put forward some pertinent reasons why the "Crescent" brand sodium bicarbonate should be used in the manufacture of aerated waters in place of chalk, whiting, limestone, or marble. Not only can the chemist with the same generator manufacture three times the amount of carbonic-acid gas per charge, but the same quantity of sulphuric acid will yield twice the amount of gas. Moreover the careful pharmacist may at the same time produce his own Glauber salts as a by-product. Those chemist-aerators who have not used this mineral-water bicarbonate should try a 2-cwt. bag. (Pp. 162 and 163.)

W. J. Bush & Co., Ltd.,

Ash Grove, Hackney, London, N.E., in an inset with a drop-scene front page, suggest the excellence of the fare in essences, essential oils, etc., provided for their pharmaceutical patrons all over the world. The names on the gold curtain, "Melbourne," "Sydney," "Paris," "New York," "Moscow," "Montreal," indicate the world-wide ramifications of the business of "Ye Oldest Essence Distillers." On the back page is a photograph giving eloquent reality to the supposition that Bush's business is big. The photograph of the motor fleet in a corner of the yard at Ash Grove supplies a gap in the sketch of the business inserted in this issue (p. 128). The Perfumery Department send a beautiful supplement of which a charming reproduction of a garden picture with an eighteenth-century setting forms the frontispiece. It is entitled "The Scent of an Old English Garden," and nothing could be more *à propos* to "Potter & Moore's Old English Lavender-water," which

was first produced in 1749. The whole four pages is given over to the Potter & Moore products in perfume, in bath crystals, and in sachets. The note of old-time elegance is quite conducive to make this standard perfume even more popular with chemists than it hitherto has been. (Pp. 32 and 33.)

Butler & Tanner,

Selwood Printing Works, Frome, Somerset, give in their inset a fine illustration of good advertising. The first page shows how colour work can be effectively reproduced, and the second indicates tasteful type-setting, both pages being presented with the minimum of wording and the maximum of effect. This firm make a feature of printing for chemists, and invite applications for specimen booklets, catalogues, and so forth. The inset will be found between pp. 64 and p. 65.

W. B. Cartwright, Ltd.,

of Rawdon, near Leeds, have produced an inset of thirty-two pages which is "alive" from start to finish. The style all through is distinctive, as is expected from a firm whose regular advertisements in *THE CHEMIST AND DRUGGIST* are characterised by their individuality. Mr. W. B. Cartwright, the managing director, contributes a foreword which explains the company's policy in a forceful way. Equally convincing is the combined "Introduction" by the works manager—himself a pharmacist—and the advertising manager. Then follow pages of well-illustrated text descriptive of the packed specialities of the company. These run the whole gamut of pharmaceutical requirements, and all are attractively produced, including a surprising variety of packed tablets, the maximum output of which at the Cartwright factory is put at about three tons per week. (Foreign copies only.)

Geo. Curling, Wyman & Co.,

56-59 Bunhill Row, London, E.C., announce in a well-produced single sheet that they have been compelled by the steady growth of business at home and abroad to extend their premises. This is a healthy sign, and the increased accommodation (which includes another laboratory, a bonded tincture department, and a packed goods department) will be for the benefit of both firm and customers. (Foreign copies only.)

Eucryl, Ltd.,

61-63 Lant Street, Southwark, London, S.E., fully appreciate that profit-on-the-sale is the item of first importance with the business man. It is not every proprietary that guarantees 100 per cent. profit, and the proprietors of this popular dentifrice do well to emphasise their point in season and out. Moreover, there is a "really generous offer to chemists" in an envelope attached to the "Eucryl" inset which tends to make the retail profit still greater. (Pp. 64 and 65.)

Freeman's Chlorodyne, Ltd.,

70 Kennington Park Road, London, S.E., put forward cogent reasons why buyers should stock the chlorodyne with the "Elephant" trademark on the label. A remedy which has behind it a reputation for efficiency of nearly seventy years' standing has certainly something solid to commend it. Besides, the profits on retail sale are well worth having. (Foreign copies only.)

Wm. Gardner & Sons (Gloucester), Ltd.,

engineers, Gloucester, have succeeded in associating their name with the sifting, mixing, crushing, and milling machinery used in the drug and allied trades. One seldom mentions "mixers and sifters" without also thinking of "Gardner of Gloucester." This has been brought about by such business-like circulars as that inserted as an inset in this issue, and a long range of the latest machines for "everything siftable and mixable" is illustrated, described and priced in this issue. (Pp. 162 and 163.)

Goodall, Backhouse & Co.,

Leeds, are making a speciality this time of toilet and medicated preparations, such as cold-

cream, zinc ointment, and tooth-pastes in collapsible tubes. Their inset gives an excellent idea of the styles of packing, and full particulars are given of the prices. The tubes are issued in three sizes, and the strong display boxes in which these are sent out lend additional value to the purchase. (Pp. 32 and 33.)

The Hanover Rubber Co.,

17 Goswell Road, Aldersgate Street, London, E.C., make a speciality of rubber sponges of all kinds, and surgical hard and soft rubber goods. They give illustrations in their inset of syringes, douche-fittings, sprays, vulcanite combs, and rubber sponges. A view is given of the factory, which was established in 1862, and now employs 3,500 persons. Air-cushions, indiarubber catheters, indiarubber tubing, stomach-tubes, and other kinds of druggists' sundries can be obtained from this company at first-hand. Trade in rubber sponges particularly appears to be continually on the increase, and it should be worth while for chemists, therefore, laying in new stocks to inspect samples with the "Crown Warranted Pure Rubber" mark. (Pp. 162 and 163.)

Horlick's Malted Milk Co.,

Slough, Bucks, are making their Malted Milk specialities quite a vogue with chemists. Besides the familiar package of Horlick's Malted Milk—now seen in almost every pharmacy—the new size Malted Milk lunch tablets are illustrated and described. The universally appreciated points in this inset will be the particulars of cost and selling prices of the different packings. (Pp. 64 and 65.)

J. G. Ingram & Son,

Hackney Wick, London, N.E., have acquired repute as specialists in and manufacturers of surgical indiarubber goods of all kinds. "Ingram's Enemas" have been the standard in the British drug-trade for years, and the improved "Utilema" and the "Sterilendum"—two of Ingram's specials—are shown and described fully in their inset. The acid-proof "Satinette" aseptic bed-sheets have caught on, as they deserve to. We have here a bed-sheeting that is sterilisable without deterioration to the fabric and impervious to acid and alkali. Other Ingram specialities pictured in this supplement are hot-water bottles, beds and pillows, air-cushions, the famous "Agrippa" band-teat and valve, and a series of indiarubber ball syringes, breast-relievers and cupping-glass. (Inserted loose.)

McKesson & Robbins,

manufacturing chemists, of New York City, U.S.A., recognise that physician, pharmacist, and the general public like to have their medicines as attractive as possible consistent with efficacy. They make a point, therefore, in their four-page inset of the fact that the McK. & R. capsuled pills are prepared with the greatest care, so that they are absolutely reliable in therapeutic effect, and yet they are alluring by their appearance. The ovoid shape and the continuous coating ensure their being acceptable to the patient, and medical men in all parts of the world have proved their medicinal virtues. A page is devoted to reductions in list prices, also another to changes and additions to the list. The fourth is a "Calox" page; the British depôt for this world-known dentifrice being now G. B. Kent & Sons, Ltd., 75 Farringdon Road, London, E.C. (Pp. 162 and 163.)

E. Merck,

Chemical Works, Darmstadt (London address, 63 Crutche Friars, E.C.), confines the inset in this issue to a description of the world-known chemicals and to two standard Merck preparations—cocaine and hydrogen peroxide. Just below a picture of the great works at Darmstadt (resembling a miniature town), pharmacists all over the world are reminded that the firm are the oldest and largest makers of cocaine in the world. A facsimile of an original bottle of Merck's hydrogen peroxide (10 vols.), made by a new process, is given. (Pp. 162 and 163.)

G. S. Mumford & Sons,

Newcastle Granary and Mills, Farringdon Road, London, E.C., are introducing a new remedy for hæmorrhoids, in the sale of which they invite the co-operation of the drug-trade. The "Pylitna" preparations are on the P.A.T.A. protected price-list, and the proprietors are offering special terms for counter-display besides. A genuine cure for this painful complaint is needed, and there ought to be a future for "Pylitna" powders and ointment. (Pp 32 and 33.)

Newball & Mason,

Nottingham, have, by skilful illustration and iteration, made an advertising phrase a household axiom. One can almost hear the scarlet-coated golfer on the front cover of the inset say to the damsel in sun-bonnet and apron, "Good!! It's Mason's." On the fourth page our familiar bucolic friend appears with the actual words all round him. By deduction, the chemist (who finds the profits on the sale of Mason's Extract of Herbs quite "good") applies the standard of quality (and profit) to the seasonable lines indicated on the inside pages. (Pp. 64 and 65.)

A. & F. Pears, Ltd.,

71-75 New Oxford Street, London, W., emphasise in a peculiarly attractive way their claim to the title of Royal Soapmakers. Their inset fitly upholds the reputation they have made as artistic advertisers, and as pioneers of the wedding of Art to Advertising. The rich colouring of the musico-heraldic design on the front cover is almost as attractive to the majority of chemists as the interesting discount-on-quantity terms set forth inside. Then, what trade-mark could be more apt, or tabulation of awards more eloquent? (Pp. 32 and 33.)

Spatula Publishing Co.,

17 Sudbury Building, Boston, Mass., U.S.A. The "Spatula Girl" is a feature of monthly issues of the bright American magazine of that name, but the "Spatula Soda-water Girl" is presumably the queen of them all. At least she is a fascinating introduction to the details regarding the "Spatula" business books and advertising schemes given in their four-paged inset. Pharmacists are all business-getters nowadays, so a perusal of the "Spatula" inset gives them fresh opportunity for thought and decision. (Pp. 32 and 33.)

Standard Tablet & Pill Co., Ltd.,

Hove, Sussex, issue a very practical inset of thirty-four pages and cover. It is devoted entirely to chemists' "own-name" toilet-articles. It is well illustrated all through, and it covers a very wide range, over 160 different preparations being indicated. The first page is taken up entirely with facsimile reproductions in colour of labels used for such things as "Otto of Violet Soap," "Oatmeal Cream," "Lavender and Rosemary Shampoo Powder," and so forth. The brightly but tastefully dressed toilet-articles make of themselves a magnetic counter-display, and the company supplement this and assist general sales by supplying chemists with a beautiful window-display model of the bust of the Venus de Milo (their trade-mark) as well as a fine assortment of showcards. Some of the latter are cleverly illustrated with original drawings, and all tend to fill the chemist's till and swell his profits. (Foreign copies only.)

H. E. Stevenson & Co.,

122 Great Suffolk Street, London, S.E., make a feature in their pink circular of concentrated extracts and tinctures. The concentrations for producing liquid extracts, tinctures and infusions, are of especial value to Colonial and foreign buyers. They are guaranteed to produce preparations of full pharmacopœial strength, and in these days of rapid dispensing for Insurance work their use at home as well as abroad is likely to be increased. (Foreign copies only.)

Stevenson & Howell, Ltd.,

Southwark Street, London, S.E., put before Home readers details of the new series of

H. & S. pure fruit essences. Each of the eight essences named is accompanied by an illustration in natural colours of the fruit used. Therefore, we have eight little coloured pictures of raspberries, strawberries, lemons, pineapples, cherries, sweet oranges, blackcurrants, and coffee-berries. On the back is a representation in black and white of a bunch of lemons to drive home the fact that a faultless lemonade is produced by using the "Red Ball" brand of essence of lemon. A different inset is distributed with the foreign copies. This also is coloured on one side, and the classical design enshrines in an unmistakable manner the advantages of "Orana" (Orange Squash). On the other side, the fact that the "Red Ball" brand essence of stone ginger-beer is made from the finest Jamaica ginger is graphically depicted. (Pp. 64 and 65.)

Suttley & Silverlock, Ltd.,

92 Blackfriars Road, London, S.E., are imbued with the modern spirit. They take as the text to their circular the immortal parody of Goodyear, which every business man ought to know by heart. To those who have no time, or perhaps inclination, to write up advertising copy, they proffer the glad hand. A staff of trained chemists, with advertising skill superadded, are at the disposal of the drug-trade for scheming out, writing up, and producing appropriate advertising literature. Portraits of "Two of the Pills" who help with their ideas and experience are presented on the front page. The second page is given over to representative samples of good-class labels for a pharmaceutical speciality and for a foot-bath powder. (Pp. 64 and 65.)

Wilkes & Co., Ltd.,

printers, 41-47 Friar Street, Southwark, London, S.E., call attention to "the pity of it." One is bound to read the reason for this commiseration and the point with regard to good printing and printing display is put so forcibly that one is bound to agree. The lesson of the waste of a hundred thousand circulars *plus* postage is gently and insidiously pushed home, and makes an excellent text for the advice on the *reverse* side of this striking inset. Moreover, the entire "lay-out"—to use a printing term—shows what this expert printing firm can do in the way of attraction by type and type-setting. (Pp. 64 and 65.)

Wright, Layman & Umney, Ltd.,

44-50 Southwark Street, London, S.E., present in the form of a well-printed sixteen-page inset a selection of seasonable specialities. These include shampoo-powders, complexion requisites, seidlitz-powders, salines, health-salts, and citrate of magnesia in many different packings. The distinguishing feature of the inset is the excellence of the illustrations. The would-be purchaser can choose the style he fancies and be sure of not being disappointed when he gets delivery of the original. It is appropriate on this, the Jubilee year of the introduction of Wright's coal-tar soap and liquor carbonis detergens, that six pages of the inset should be taken up with Wright's coal-tar specialities. The window-display schemes, the show material in plaster-cast and litho, and each of the coal-tar products are given adequate representation in this business-like circular. (Pp. 32 and 33.)

The Publisher asks us to remind the trade that the next opportunity for distributing insets will be the Winter Number of THE CHEMIST AND DRUGGIST, to be published on January 31, 1914. Our staff of artists and copywriters is at the disposal of advertisers who desire assistance in drawing up suitable announcements. Printed particulars are supplied of the conditions on which insets are accepted for distribution, and preparations should be made well ahead of the actual time of publication.

During the rioting by the dockers on strike at Leith early on July 17 the shop occupied by Messrs. John T. Coats & Co., chemists and druggists, 64 and 65 Tolbooth Wynd, had four large plate-glass windows smashed.

WESTMINSTER WISDOM.

The Week in Parliament.

ANIMALS (ANÆSTHETICS) BILL.

Among the measures which have been definitely abandoned for the present Session is Mr. Walter Guinness's Bill to render the administration of anæsthetics compulsory in the case of certain operations upon animals.

THE END OF THE SESSION.

The Prime Minister made his annual statement in the House of Commons on Tuesday in reference to the various Bills which it is proposed to abandon and those which it is proposed to pass into law before the prorogation in the week ending August 16. The Milk and Dairies Bills (England and Scotland) have been dropped, and so have those relating to hop substitutes, bee diseases, inebriates, and Irish creameries and dairies produce.

VERIFICATION OF THE STANDARDS.

There is little likelihood that in what remains of the present Session an opportunity will be found for the verification of the Parliamentary copies of the Imperial standards taking place during the present year. The standards of the British yard measure and pound weight are interned beneath one of the windows of the staircase leading to the upper waiting-hall of the House of Commons, and the ceremony takes place once in every twenty years. The last occasion was in 1892, during the Speakership of Viscount Peel.

NET WEIGHT IN PACKAGES.

Mr. Sydney Buxton has written a letter to the members of the deputation which waited upon him in the early part of the present year stating that the question of introducing legislation to prevent fraud by enacting that any person selling goods in packages shall indicate the net weight of the goods plainly on the wrapper is of so complicated a nature that it will be quite impossible to take Parliamentary action at an early date. The right hon. gentleman says he considers that a full inquiry is necessary, but whether it is to be by means of a Select Committee or a Departmental Committee has not yet been settled.

PATENT-MEDICINE COMMITTEE'S REPORT.

The following statement appeared in "The Times" of July 18:

The Select Committee on Patent Medicines, presided over by Sir Henry Norman, hope to present their report before the end of the Session. The outcome of the inquiry is of considerable interest to the public, as if the Committee's proposals are generally approved, steps may be taken next Session to give effect to them.

Although the consideration of the report is not concluded, there is reason to believe that one of the chief recommendations will be that the administration of the regulations affecting the sale and advertisement of proprietary articles should be carried out by one body under one department of the State, instead of under several, as at present. It will probably be agreed also to recommend that quack advertisements professing to cure some of the deadliest diseases, such as cancer and consumption, should be prohibited, and that there should be a more rigorous censorship of the advertisements of patent medicines professing to cure peculiarly feminine complaints.

Another subject with which the report may be expected to deal is whether the vendors of patent medicines should be required to accompany each article with a statement of the ingredients. It is thought unlikely that this recommendation will be made, and that the view taken will probably be that to give a statement of the formula to the State authority would meet the case.

This, it will be observed, is a digest of the forecast by our Parliamentary representative, printed in our issue of June 21.

INSURANCE ACT AMENDMENT BILL.

The Insurance Act Amendment Bill came before the Grand Committee in the House of Commons on Tuesday. Mr. W. S. Glyn-Jones and Dr. Addison are members. The proceedings are likely to extend over two weeks of

Parliamentary time. Mr. Glyn-Jones and Dr. Addison have given notice of the following clause:

Local Pharmaceutical Committees.—In every county or county borough there shall be elected in accordance with regulations made by the Insurance Commissioners, by the persons, firms, and bodies corporate, who have agreed to supply drugs, medicines, and appliances to insured persons whose Medical Benefit is administered by the Committee, a local Pharmaceutical Committee, and it shall, subject to regulations made by the Insurance Commissioners, be consulted by the Insurance Committee on all general questions affecting the supply of drugs, medicines, and appliances to insured persons, and shall perform such duties and exercise such powers as may be determined by the Insurance Commissioners.

The two hon. members have also given notice to add to the end of Clause 5:

Where it is made the duty of an Insurance Committee under the provisions of this Act or of the principal Act, or of regulations made thereunder, to ascertain, in respect of any matter affecting the administration of Medical Benefit in the area, the opinions and wishes of the medical practitioners who have entered into agreements with the Insurance Committee for the attendance and treatment of insured persons whose Medical Benefit is administered by the Committee, they may do so through a committee appointed by such practitioners in accordance with regulations made by the Insurance Commissioners, and such committee shall perform such duties and shall exercise such powers as may be determined by the Insurance Commissioners.

On Wednesday afternoon an amendment to Clause 4 of the Bill, proposed by Mr. Charles Bathurst, which related to the question of maternity benefit, was withdrawn after Mr. Glyn-Jones argued that while the interest of the exempted person should be considered, they did not provide one single penny towards the cost. He added that surely he had a right to consider the interests of the State and of the employers, and that no two benefits could do more for those interests than that of maintaining the health of the employed person.

Mr. Locker-Lampson has given notice of the following among other amendments:

Where in any town or district an approved society proves to the satisfaction of the Commissioners that it can provide adequate medical benefit for its members, and that it has made arrangements with one or more resident local practitioners to that end, it shall be at liberty to administer such benefit, and the provisions of the principal Act shall be varied accordingly, but so, however, that any member of such society shall be at liberty to take medical benefit as provided by the principal Act.

A Field of Belladonna.



From a photograph taken last summer at the farms of Messrs. William Ransom & Son, Hitchin. Writing in the *C. & D.* of December 15, 1863, p. 336, Mr. C. W. Quin, F.C.S., said: "We find another medicinal plant for the different preparations of which Mr. Ransom has obtained great celebrity, *Atropa Belladonna*."

National Health Insurance.

Administration of Medical Benefit as regards Chemists' Interests.

Medical Benefit Administration.

With special reference to the supply of medicines and appliances.

Aberdeenshire.—At the first meeting of the new Insurance Committee for the county, held in Aberdeen on July 18, a letter from Mr. J. R. Reith, chemist, Cults, was submitted, intimating the appointment of a Pharmaceutical Committee for the county. The clerk explained that the Committee consists of ten chemists. Recommendations regarding the checking of chemists' accounts and "urgent" prescriptions were referred to the Medical Benefit Sub-Committee.

Bath.—As a result of the representations by Mr. Hallett, chemists are to be paid 17s. 3d. in the pound on their first quarter's accounts. A conference is to be arranged between the Medical and Pharmaceutical Committees in order to arrive at an understanding regarding proprietary articles.

Burton-on-Trent.—At the meeting of the Insurance Committee on July 17, Dr. Cowie, who had checked the chemists' accounts, reported that, if the total amount was gauged from the average of those checked, they would only be out some 2l. or 3l. for the whole year. They could thus be satisfied that the chemists' charges were all right. It was decided that the second quarter's accounts should be checked by a chemist outside the town, and the tender of a Sunderland pharmacist was accepted at 8s. 4d. per 1,000 prescriptions.

Cambridge.—At the meeting of the local Pharmaceutical Committee on July 18 it was unanimously decided not to have a local Pharmacopœia at present. It was further decided to ask the Insurance Committee to pay the chemists' accounts more promptly, and it was suggested that 90 per cent. be asked for as the immediate payment on account of the quarter ending July 15. At the same meeting Mr. J. Evans (President of the Cambridge and District Association) congratulated Mr. Alderman A. S. Campkin on his election as Vice-President of the Pharmaceutical Society. Messrs. E. S. Peck, Alderman H. F. Cook, and E. H. Church also offered their warmest congratulations. Alderman A. S. Campkin, in replying, said the honour was unexpected, and he trusted he should be able to perform creditably the duties, which were at present additionally strenuous owing to recent legislation.—At the Insurance Committee meeting on July 20 it was decided to pay 90 per cent. of the chemists' accounts as soon as they had been checked.

Carmarthenshire.—At a formal meeting of the new Committee last week the accounts of panel doctors and chemists for the last quarter were passed, the doctors' amounting to 3,550l., and chemists' to 780l.

Carnarvonshire.—Panel chemists' accounts for the first quarter came to 597l., but this amount was reduced by the Pharmaceutical Standing Committee's checkers to 579l. Mr. R. Fisher (Chairman of the Finance Committee) said it was but fair to say that in some cases the chemists had charged too little. After some conversation as to checking delaying monthly payments, Mr. John McIntosh (Llandudno), the pharmaceutical representative, said that subsequent to the first quarter there would not be so much difficulty in checking. Chemists would know exactly how to make out their accounts in future. They were at a loss somewhat with regard to the first quarter's accounts. He thought the chemists of the county were satisfied with quarterly accounts. Mr. J. R. Hughes remarked that several chemists had complained to him about the delay in paying accounts, and he thought monthly statements would mean less delay.

Cheshire.—Chemists have been paid 3,145l. 10s. 8d. for the supply of drugs, appliances, etc., during the first quarter, the amount paid to doctors in capitation fees for dispensing being 666l. 10s. 1d. The chemists' panel contains 214 persons or bodies corporate.

Gosport.—At a meeting of the Insurance Committee last week, Mr. E. H. Smith (chemist) referred to the incidence of the Shops Act in regard to the dispensing of "urgent" medicines on the half-holiday. He said "urgent" is open to a very wide interpretation; for instance, could a request for a baby's feeding-bottle be regarded as "urgent" within the meaning of the Act? A member murmured "Yes, if you wish to get a night's rest." Mr. Smith explained that the chemists of Gosport have arranged among themselves a rota, which will ensure at least one chemist being on duty each Wednesday from 6 to 8 for emergency and urgent cases. The Committee commended this as a reasonable and businesslike arrangement.

Isle of Ely.—At a meeting of the Insurance Committee on July 18, the clerk reported that the chemists' accounts had been submitted for checking purposes to the Pharmaceutical Standing Committee, with the result that the gross total had been reduced from 245l. 3s. 11d. to 235l. 15s. 10d. He added that the chemists had complained that the checking of the pricing had been "both careless and inconsistent." The Committee decided to send the accounts back to the Standing Committee.

Kesteven.—The revised drug tariff has been adopted by the Committee without the allowance of a clerical fee for copying prescriptions, and with the incorporation of a Kesteven Pharmacopœia. The local Pharmacists' Association have agreed to the doctors being paid a flat rate of 6d. in respect of each separate supply of medicine and of each first dressing.

Lancashire.—At the meeting of the Insurance Committee on July 16, the Finance Sub-Committee reported that chemists had received payment at the rate of 5½d. per prescription, except in a few cases. The sum paid to the chemists was 4,622l. The Drug Fund for the first quarter was sufficient to meet over 90 per cent. of the value of the approved prescriptions—some for unscheduled appliances and proprietary articles were disallowed.

Liverpool.—A circular-letter has just been issued by the Insurance Committee, contains particulars of the "agreement arrived at between the local Medical Committee and local Pharmaceutical Committee, April 28, 1913." This refers to the dropping of the clerical fee, as duplicate prescriptions are to be provided. Also late fee of 3d. or 6d., according to the hour. "Repeat Mist." is to be provisionally accepted for six months from the present date on condition that medical men rewrite prescriptions at the commencement of each quarter or when patient desires to change his chemist. In connection with the formulary (just published at 6d.), any question of variation in dispensing-fee is deferred for six months from date.

London County.—A meeting of the London Pharmaceutical Committee was held at 17 Bloomsbury Square, W.C., on Tuesday, July 15, Mr. Edmund White (President) in the chair. The meeting discussed the proposed standards for lint, bandages, and gauzes, samples and prices being examined. Ultimately the following standards and prices were agreed to:

LINT.—The area must be from 3,000 to 3,250 square inches per pound, and tariff prices as follows: 1-oz. 2d., 2-oz. 4d., 4-oz. 7d., 8-oz. 1s., and 1-lb. 1s. 11d. per packet in each case.

GAUZE, PLAIN.—6-yd. packets must not weigh less than 2 oz., 3-yd. packets must not weigh less than 1 oz. The same standard must apply to medicated gauzes plus percentage of medicament. Tariff prices are: 9½d. per 6-yd. packet and 5½d. per 3-yd. packet for plain gauze; 1s. per 6-yd. packet and 6½d. per 3-yd. packet for medicated gauze.

BANDAGES.—Grey open weave. The counts per square inch must not be less than 42 by 27, and the weight per dozen, without paper, must not be less than 2,334 grains for 2-in. bandages, 3,500 grains for 3-in. bandages, 4,666 grains for 4-in. bandages. The prices to remain as specified in the revised tariff.

The Secretary (Mr. G. A. Tocher) was instructed to embody these particulars in his report to the London Insurance Committee. With regard to chemists' accounts, the President informed the Committee that the Insurance Committee proposes to pay at the earliest moment 75 per cent. of the value of each account received. Owing to the number of calls upon his time, the President desired to resign his position as representative on the London Insurance Committee, and it was agreed that Mr. Woolcock should be nominated, subject to the approval of the Council of the Pharmaceutical Society. The Secretary and Mr. H. Skinner were appointed to consider the advisability of issuing a monthly report to London pharmacists. To meet the expenses incurred by the Secretary on behalf of the Committee, the sum of 5l. was voted, each local Association taking its proportionate share in this expense.

Monmouthshire.—At the last meeting of the Insurance Committee it was stated that 4,600l. had been received for the Drug Fund, and of this 2,477l. 9s. 7d. had been disbursed.

Rosendale.—At the meeting of the local Insurance Committee on July 17, Mr. J. W. Sutcliffe, of Bacup, complained about the deductions made by the Lancashire Insurance Committee in chemists' accounts without giving any particulars thereof. The Secretary is to write to the Lancashire Committee on the subject.

Stoke-on-Trent.—At the meeting of the Insurance Committee held on July 17, Mr. Edmund Jones, chemist, was nominated for the vice-chairmanship, but Mr. Jones said he did not desire to enter into competition with the retiring Vice-Chairman, Mr. Threadgold, in the latter's absence. Under the circumstances it would be

INDIAN LEMONGRASS OIL.—The lemongrass-oil industry in South Malabar is making satisfactory progress (according to the "Indian Trade Journal"), the exports in 1912-13 having increased from 19,278 gals., valued at Rs. 435 lakhs, to 32,248 gals., valued at Rs. 7.11 lakhs. France was the best customer, her imports increasing from Rs. 2.42 lakhs to 4.29 lakhs, while shipments to Germany, the United States, and the United Kingdom amounted to Rs. 1.73, 0.65, and 0.44 lakh, against Rs. 0.81, 0.53, and 0.59 lakh in the previous year.



Memoranda for Correspondents.

All communications must be accompanied by the names and addresses of the writers, otherwise they cannot be dealt with. Queries by subscribers on dispensing, legal, and miscellaneous subjects connected with the business are replied to in these columns if they are considered to be of general interest.

Letters submitted for publication (if suitable) should be written on one side of the paper only. Their publication in "The Chemist and Druggist" does not imply Editorial agreement with the opinions expressed.

Hordeum Decorticatum.

SIR,—With reference to the letter of Messrs. Southall Bros. & Barclay, Ltd., appearing in your issue of July 19, we are able to confirm what is there stated as to the facing of pearl barley. During the first three months of the present year we had occasion to examine a number of samples by Krzizan's method, and found that genuine specimens yielded from 0.04 to 0.06 per cent. of insoluble matter, whereas two adulterated specimens gave respectively 0.30 and 0.62 per cent.—Yours faithfully,

HARLAND & BROWN.

Plough Court, 37 Lombard Street,
London, E.C.

B.P.C. Presidential Survey.

SIR,—I should like to thank you very much for the series of articles, "B.P.C. Presidential Survey," that have appeared in the *C. & D.* They have been not only interesting, stirring up many pleasant reminiscences, but stimulating in a high degree to all who take any interest in the Conference or the progress of pharmacy. Further, though the National Insurance business is a very debatable subject, I feel that the general tone of your treatment of it, combined with the practical common-sense advice given us, has made many of us your unlimited debtors.

Yours faithfully,

Upper Tooting, S.W.

JNO. INGHAM.

[We are pleased to know that the articles have been so well appreciated. A reprint of them in book form was presented to each member attending the Conference meeting in London this week. The limited number of copies remaining will be supplied at 1s. each post free.—EDITOR, *C. & D.*]

Phellandrene in Eucalyptus Oil.

SIR,—Mr. Desnos in his letter in *THE CHEMIST AND DRUGGIST* of July 19 calls attention to the fact that we allowed his letter in the issue of May 31 to pass without comment. As a matter of fact, the points he raised in this letter had been dealt with by us in a private correspondence with him, and we could see no object in repeating them. In his letter in *THE CHEMIST AND DRUGGIST* Mr. Desnos sets out to demonstrate that it is not possible to produce a eucalyptus oil having a rotation of -9 and a specific gravity as low as 0.902, and in order to do this he starts by assuming that a group of oils with certain characteristics are the only ones that it is possible to use for blending. There are surely many others which can be used for this purpose, and even those given by Mr. Desnos have not always the fixed characteristics which he ascribes to them. For example, the specific rotation of ol. amygdalinæ is often much below -55 . If Mr. Desnos will refer to the "Journal of the Society of Chemical Industry" for July 15 he will find an abstract of a paper by Messrs. Baker and Smith which gives the characteristics of a large number of eucalyptus oils, and which illustrates the wide variation of their physical characters. We must once more emphatically state that the specific gravity on the sample referred to by Mr. Desnos was done independently by two different persons, and we cannot admit that it is wrong. With regard to the question of phellandrene, any oil which contains so much phellandrene as not to pass the B.P. test cannot, in our opinion, be used in blending.—We are, yours faithfully,

M. S. SALAMON.

79 Mark Lane, London, E.C.

W. M. SEABER.

Warning to London Chemists.

Mr. Kenneth C. Ness, L.D.S., of 581 Finchley Road, Hampstead, N.W., informs us that a man is going round chemists ordering drugs in his name without his consent, the drugs consisting chiefly of morphine and cocaine. Mr. Ness has communicated with big chemists in Camberwell, Rosslyn Hill, and Great Portland Street, as well as in his own neighbourhood. In some instances the man has run out of the shop when he has heard the chemist phoning to Mr. Ness, who feels that chemists should be warned not to supply anyone with drugs in Mr. Ness's name.

Insurance Dispensing.

SIR,—Upon reading "Xrayser II's" comments upon Mr. Huntrods I calculated the percentage of Insurance scripts containing scheduled poisons, and found it came to 59 per cent. in my case. Now, it would puzzle any unqualified drug-store keeper how not to offend his customers by turning these away on the one hand, or else breaking the law, on the other hand, by dispensing them. Perhaps it would be as well if some others would furnish statistics as to the frequency of scheduled poisons, so as to be ready in the matter.

ANOTHER SINGLE-HANDED CHEMIST. (147/14.)

Experience of Store Pharmacy.

SIR,—I see the question of why men go to the stores is still a hardy perennial. Speaking from long experience of both styles of business in England, the reason is not so much the larger salary as the definite businesslike methods the "store" firms employ. Men are treated as responsible beings, and promises are adhered to. Closing at 8 p.m. is not vaguely construed as 9.30 p.m.; pay-day is not the "movable feast" most small chemists make it; rights and duties are clearly defined. In dealing with assistants, a large number of chemists are guilty of downright dishonesty in either suppression or exaggeration of facts when engaging men, though the Shops Act will do much to clear the air. Gentle souls still advertise "comfortable home, time for study, facilities for tennis and boating, progressive salary to good man"; but "that blessed word Mesopotamia" has almost lost its charm. There is no such balm as this in all the Gilead of the stores, but they get their pick of assistants. It is a sadly prosaic world. It is long since these matters possessed any personal interest for me, but I like to read my *C. & D.* week by week and see how the world wags; especially do I take a cynical delight in Colonial advertisements, offering young hopefuls at home about half the rates paid to locally-qualified men, of whom most Colonies (except a few isolated holes and corners) possess plenty. *Verb. sap. suff.*

Yours faithfully,

Transvaal.

TOMMY. (151/34.)

Subscribers' Symposium.

For questions, answers, incidents, and interchange of opinions among "C. & D." readers.

Treating Sheep's Fleeces.

Calc. Sacch. (133/2) writes: "A stockmaster requires a preparation to harden and put a shine on the fleeces of Shropshire sheep, but it must not colour the sheep." Suggestions are invited from agricultural chemists.

Appreciations.

"I wish to thank you for the two-guinea prize awarded to me in your *Diary* competition. I have taken a hand in this competition about nine times during the last seventeen years, and have had the good fortune to get placed every time. It has been very interesting, and has always given me a feeling of pleasure to see the names of the other successful brother-chemists from all the corners of the earth. It seems to me that a paper like yours does much to join together the great brotherhood of chemists all over the world."—*Thos. Russell* (Auckland, N.Z.).

Pharmacy in Canada.

"British Columbia has a most beautiful climate, and the chemists' shops would put most of the Old Country ones in the shade," writes a Minor man in Canada (111/30). "For instance, the one I am in employs seven qualified men, of whom I am the only one with the English qualification. The store itself has a ladies' lounge room, a rubber and truss room, and a room for serums, chloroform, ethers,

etc., which is kept at an even temperature all the year round. All these rooms are large and well appointed. The takings are somewhere about \$500 a day (about 100*l.*). We deal in all the best-known English 'patents' and the highest class perfumes. One thing I would like to know, and it is this: Why are the English wholesale people so frightened to come over here and push their goods? Swiss, German, French, American—anybody but English; yet I am convinced that the quality of the drugs I handle here is not to be compared with those put out by, say, The British Drug Houses, Ltd."

The Chemist's Anti-Insurance Act Lament.

The last of chemist-kind am I,
The pale reflection of a bygone craft
Which once in gaudy splendour held high sway
O'er pill and potion, liniment and draught.
My long-lost brothers! your profession's gone,
Of livelihood you're callously bereft,
Your hopes, once high, are prostrate in the dust,
And I, a living spectre, I alone am left.

Lonely I am, in this deserted place,
My pill-machine grown rusty with disuse,
My mortars and my measures all laid by,
My cash-till empty, as you may deduce.
And all because the doctors will not write
Those mystic scrawls which once could cure all ills,
And patients now no longer come to me
For well-plied mixtures or for varnished pills!

For now the eaze is all for pure, fresh air,
And now with air my shop-rounds all are filled,
And if I could find customers for it,
'Twould pay me as did once water distilled!
But there's the rub! the public find fresh air
Around, above, and all about them—
While I, who can't live from it, must live on't,
For that seems all that I'll get out of them!

J. P. T. (143/54).

Dispensing Notes.

This section is for the discussion and solution of dispensing problems and prescriptions submitted by "C. & D." readers. We are always pleased to receive the opinions of readers for publication. "The Art of Dispensing" ("C. & D." Office, 6*s.*) is the standard book of reference on this subject.

A Green Bismuth Mixture.

SIR,—Would you be good enough to tell me why the following mixture was green in colour at the second time of dispensing and brown at the first?—Yours truly,

F. POUNTAIN.

Bismuth. carb.	...	...	...	3ij.
Strontii brom.	...	...	...	3ij.
Mac. trag.	...	...	...	3j.
Spt. chlorof.	...	...	...	3ij.
Tr. card. co.	...	...	...	3iss.
Tr. hydrastis	...	...	...	3iv.
Liq. arsen.	...	...	...	℥34
Aq. ad	...	...	...	5viij.

5ss. nocte maneque.

[The mixture when compounded according to the prescription has a suggestion of light green in its appearance. The colour of compound tincture of cardamoms is red and that of tincture of hydrastis is yellow. The mixture when prepared without the hydrastis is of a purply-pink colour; after the hydrastis has been added it acquires the faint green appearance. This is explained, we assume, by the circumstance that some shades of red when mixed with yellow produce a green. The brown appearance of the first-made mixture was probably due to some accidental contamination. The colour apparently does not change—or, at any rate, does not change quickly. We have had samples standing for some days without any apparent alteration.]

Insurance Dispensing Queries.

INDIARUBBER BANDAGE.—*Aspirin* (139/57).—Charge cost plus a third for an indiarubber bandage not on the tariff. Postage may be added if procured by special order, but the Insurance Committee may disallow this.

DISPENSING-FEE FOR SIMPLE PRESCRIPTION.—*Chemicus Rusticus* (146/33) writes stating that a dispensing-fee of 2*d.* was disallowed on the following prescription: "Tr. benz. co. 3ij. Sig.: The paint." [We agree with our subscriber that he followed the intention of the tariff in charging the dispensing-fee, the directions making it more than

a simple order, say, for Friar's Balsam, 2 oz. The matter is one of principle, and should be brought to the notice of the local Pharmaceutical Committee for settlement by them with the Medical and Insurance Committees.]

PRESCRIPTION PRICING.—*J. M. W.* (147/5).—We do not undertake the pricing of ingredients in Insurance prescriptions unless there is some point of general interest or some item in dispute. Apparently your queries come within the latter category, but you do not say so, and it is impossible to give authoritative answers unless full details are given, as local tariff conditions vary. On the old tariff the following charges would be correct, unless subject to special agreements: Tr. digitalis ℥80, 1*d.*; tr. nuc. vom. ℥112, 2*d.*; bismuth. carb. 3iv., 6*d.* The price of the nux-vomica tincture is an anomaly proceeding from the drachm rate.

APPEAL AGAINST PAYMENTS.—*W.* (11/13).—There is no appeal against the payments allowed by Insurance Committees to chemists for drugs supplied. Local Pharmaceutical Committees have the right to inspect all accounts before they are passed in accordance with Medical Benefit Regulation 44 (2), and after the expiration of the year, "before payment of the balance the Committee shall submit all accounts to the Pharmaceutical Committee which shall have power to reduce or disallow any item of any account submitted to them." From this quotation it is clear that the Pharmaceutical Committee has no power to advise in cases of complaints of inadequate payment that any particular item should be raised.

Legal Queries.

Before writing about your difficulty consult "The Chemists' and Druggists' Diary," 1913, pp. 211-242 and pp. 457-459, where most legal difficulties are anticipated.

Istic Sum (150/35).—Black wash is in Part II. of the Schedule, as it contains oxide of mercury. Blue ointment is not a scheduled poison.

Subscriber (146/51).—See the paragraph "Chemists" in the *C. & D. Diary*, and submit your indentures to the local supervisor of Excise.

Hospital (136/54).—THE SHOPS ACT does not extend to hospitals, because they are not "premises where any retail trade or business is carried on"; consequently dispensers in hospitals are not subject to the provisions of the Act.

Miscellaneous Inquiries.

We do not undertake to analyse and report upon proprietary articles, and when samples are sent particulars should be supplied to us as to their origin, what they are, what they are used for and how.

We do not as a rule repeat information which has been given in this section during the past twelve months, as it occupies space which can be more profitably utilised for other information. In such cases the numbers are mentioned, and if querists cannot refer to these they may obtain the numbers from the "C. & D." Office at the published prices, usually 6*d.*

M. P. S. (137/4).—In the formula for PHTHISIS-REMEDY of last week "Thiocol Roche" should have been printed for "Thiol Roche."

F. J. H. (140/20).—SKIN-CREAM.—The *stearin type* is represented by the following formula:

Stearic acid	...	...	...	48 oz.
Powdered borax	...	...	...	24 oz.
Sodium carbonate (monohydrate)	...	...	...	23 oz.
Glycerin	...	...	...	24 oz.
Distilled water	...	...	...	288 oz.
Perfumo	...	...	...	a sufficiency

Weigh the water, glycerin, borax, and soda into a suitable vessel, and dissolve by the heat of a water-bath. When dissolved and at boiling-point add the stearic acid in granular form, gradually, stirring constantly till cold. Boiling water may be added if desired to obtain a softer cream.

The *cascin type* is shown by the following recipe:

Skimmed milk	...	...	...	1 gal.
Powdered alum	...	...	...	1 oz.
Boric acid	...	...	...	3 dr.
Glycerin	...	...	...	3 oz.

Heat the milk to about 170° F. Dissolve the alum in 4 pints of hot water and add it to the milk slowly, with constant stirring. Continue the heat and stirring until precipitation is complete. Let the mixture stand till cool, pour off the clear liquor, add to the precipitate 1 gal. of water, stirring and breaking up the magma as much as possible.

Allow this to separate, pour off the water, collect the casein on a cheese-cloth strainer, squeeze out all the water possible, then dry between sheets of botting-paper without artificial heat. Place the casein in a large mortar, add the glycerin in which the boric acid has been dissolved, and beat and rub the mass till it is perfectly smooth and soft. Set aside for six hours, and pour off the water that separates; then beat in perfume and carmine, if desired, adding a little more glycerin if necessary to bring to the proper consistency.

As a *perfume* for either of the above use 1 oz. of the following to 20 lb. of the product:

Muguet royal	...	...	8 oz.
Otto rose	...	...	$\frac{1}{2}$ oz.
Otto jasmine "Bush"	...	...	$\frac{1}{2}$ oz.
Ylang-ylang oil	...	...	1 oz.
Artificial musk (100-per-cent.)	...	...	$\frac{1}{2}$ oz.
Alcohol	...	...	6 oz.

B. H. (17/7).—(1) LUMINOUS PAINT.—There are several formulæ for making this, all of which depend upon the production of sulphides of calcium or strontium by means of heat. Balmain's formula is as follows:

Finely powdered calcined oyster-shells	...	...	20 grams
Sulphur	...	...	6 grams
Starch	...	...	2 grams
Bismuth nitrate	...	...	0.55 gram in 8 c.c. of acidified alcohol
Alcohol	...	...	100 c.c.

The mixture is exposed to the air until the alcohol has evaporated, and is then calcined. After calcination the upper layer, consisting of calcium sulphate, is removed, and the remainder of the mass powdered, and again heated for fifteen minutes.

(2) **SKIN-CREAM.**—The stearin type, a formula for which is given in reply to "F. J. H." is the one you should adopt. The casein type is good, but often gives a lot of trouble through shrinkage on keeping.

Edired (140/19).—ACCUMULATOR ACID.—This is sulphuric acid of sp. gr. 1.2, containing approximately 27.1 per cent. of hydrogen sulphate. The B.P. sulphuric acid contains 98 per cent., so that by adding $2\frac{1}{2}$ parts of water to 1 part of this acid you produce the admixture desired. The exact quantity is found by the rule: Multiply the given quantity by the given percentage, and divide by the required percentage; the quotient will be the quantity to which the liquid must be diluted by the addition of water. A fuller account of the method of dilution was given in the *C. & D.*, April 2, 1910, p. 518.

F. H. D. (145/37).—HAIR-WASHES.—A selection of modern formulæ for hair-washes will be found in the *C. & D.*, August 31, 1912, index folio 366.

J. P. (133/47).—Lowson's "Text-book of Botany" (Clive, 6s. 6d.) is the one most used by pharmaceutical students.

Cleanser (142/62).—CLOTH-CLEANING STICK.—The sample you send is prepared on the model of the formula given in the *C. & D.*, May 24, index folio 812, using, however, saponin in place of powdered quillaia and adding colour in the form of an aniline dye.

J. M. B. (137/67).—FOOT-BATH POWDER.—The formula given in the *C. & D.*, July 5, index folio 35, requires the use of sodii carb. exsicc.

J. F. C. (137/44).—BATS IN CHURCHES.—The best method of exterminating bats in churches is to trap them at night by means of a lantern and a net. Some time ago a correspondent informed us of a case where this method was employed, when 111 bats were caught the first night and fifty-seven on a second occasion.

E. G. T. (121/60).—MILDEW ON TOMATOES.—The copper-sulphate and sodium-carbonate wash is made as follows:

Copper sulphate	...	...	8 lb.
Washing soda	...	...	10 lb.
Water	...	...	40 gals.

Dissolve the sulphate in half the water and the carbonate in the rest, and mix.

Junior (135/45).—SILVER OXIDE dissolves in ammonia; but if the solution is exposed to the air Berthollet's fulminating silver is formed, which separates out as a black powdery precipitate. When this precipitate is dried it explodes violently on the slightest friction; in fact, explosion frequently occurs under water. There is no doubt that a trace of fulminating silver had formed in the solution of silver oxide and ammonia which you left overnight in a mortar, and that this was the cause of the explosion which took place.

Antifebrin (132/67).—You cannot have chlorodyne that is free from scheduled poison; such a preparation would be a fraud on the patient. Moreover, such a liquid would be a source of danger by giving the public the impression that chlorodyne can be taken with impunity in large doses.

A. S. J. (136/47).—(1) POWDER FOR CLEANING ARTIFICIAL TEETH requires in its composition a fairly large proportion of sodium bicarbonate. (2) **SALT OF LEMON** is not a scheduled poison in Great Britain, but it has to be labelled "Poisonous" and with the name and address of the seller, no matter by whom it is retailed.

Gent. Co. (147/14).—CONCENTRATED INFUSION OF GENTIAN.—The formula you send is objectionable on account of the large amount of boric acid and borax employed as a preservative, the object being to avoid the use of alcohol, which, however, in this case is the less objectionable preservative. Otherwise the recipe is fairly representative of an aqueous infusion. The following formula, devised by Messrs. Farr and Wright for a 1 to 7 preparation, is good:

Dried gentian-root in No. 10 powder	...	...	4 oz.
Dried bitter-orange peel in No. 10 powder	...	...	4 oz.
Tincture of lemon B.P.	...	...	4 oz.
Alcohol (90-per-cent.)	...	...	7 oz.
Distilled water	...	...	a sufficient quantity

Moisten the powder with half-a-pint of distilled water, set aside in a covered vessel for twelve hours, pack tightly in a percolator, and, adding more water, continue percolation until 29 oz. of percolate has been collected. Add the tincture and alcohol with sufficient distilled water to make 40 oz. Set aside for forty-eight hours and filter.

H. E. (141/63).—SAUCE-PRESERVATIVE.—Salicylic acid is employed in the proportion of 5ij. to a gallon, but this assumes that salt is also employed. The salicylic acid is added to the sauce while still hot. You give us no idea of the formula you employ, which makes it difficult to reply definitely to your inquiry.

F. H. D. (138/60).—BLEACHING HORSE'S HAIR.—It is possible to bleach the hair on a horse's legs, but whether it is worth the trouble and expense is another matter. The grease is removed from the hair by washing with soap and soda, and then with ether. The bleaching-agent—hydrogen peroxide made alkaline with ammonia—is then applied twice a day until the effect desired is obtained. A yellow or straw colour is generally the lightest that can be obtained, and this is neutralised by applying a solution of aniline blue.

Retrospect of Fifty Years Ago.

Reprinted from "The Chemist and Druggist," July 15, 1863.

Bill for the Prevention of Accidental Poisoning.

In the House of Commons, on the 30th ult., Lord Raynham moved the second reading of this Bill, the object of which was to require the adoption of certain precautionary means so as to guard against accidental poisoning. Sir G. Grey objected to some of the provisions of the Bill as unnecessary, and moved as an amendment that the Bill be read that day three months. The amendment was agreed to without a division, and the Bill was therefore lost. The Bill we print below for the amusement of our readers:

"1. From and after the first day of November, 1863, no substance of a poisonous nature, or calculated to injure or endanger human health or life if taken internally, shall be sold or exposed for sale by retail in any paper or other packet, but only in a glass phial or bottle of a hexagonal shape, of which five sides shall be fluted, and on the remaining side thereof a label shall be affixed, with the word 'Poison' and directions for use distinctly marked thereon; and every person who shall act in contravention of this Act shall for every such offence, on a summary conviction for the same before two justices of the peace at petty sessions in England, and in Scotland before two justices of the peace in justice of the peace court, or before the sheriff substitute of the county, or before justices at petty sessions or a divisional justice in Ireland, forfeit and pay a penalty not exceeding five pounds, together with such costs attending such conviction as to the said justices shall seem reasonable; and if any person so convicted shall afterwards commit the like offence, it shall be lawful for such justices to cause such offender's name, place of abode, and offence to be published, at the expense of such offender, in such newspaper or in such other manner as to such justices shall seem desirable."

The British Pharmacopœia. Comparison with International Standards.

By George P. Forrester, F.C.S.

ALTHOUGH it may be more than a year before the new edition of the British Pharmacopœia is published, the present is the time (owing to the work of revision being still *in esse*) to call attention to the differences between the existing official preparations and the standards adopted at the Brussels Conference for the unification of pharmacopœial preparations of potent drugs, to which Great Britain was a party. In the following table a comparison of these standards and the respective requirements of the B.P. of 1898 are given. As regards drugs, the principal differences exist in belladonna and hyoscyamus leaves, where the dried, instead of fresh, leaves are adopted, and in the use of crystallised sodium arsenate in place of the anhydrous salt. In the case of extract and tincture of nux vomica, it will be seen that the total amount of alkaloids is adopted as the standard instead of the content of strychnine alone. Differences in the strength of official preparations occur in the case of the following tinctures: Cantharides (1 in 10 instead of 1 in 80), colchicum (1 in 10 instead of 1 in 5), digitalis (1 in 10 instead of 1 in 8), iodine, opium (1 in 100 instead of 0.75 in 100), and strophanthus (1 in 10 instead of 1 in 40); further in syrup of ferrous iodide (5 per cent. instead of 7.25 per cent.), and mercury ointment (30 per cent. instead of 48 per cent.). To comply with the Brussels standards the extracts of belladonna and hyoscyamus of the B.P., which are prepared from the juice of the fresh leaves, will have to be replaced or supplemented by new preparations made from the dried drugs. It must not be overlooked that the standards of the Brussels Conference apply to percentages by weight—a fact which makes a somewhat important difference in the case of the content of potent drug in tinctures and other liquid preparations.

BRUSSELS CONFERENCE STANDARDS.	BRITISH PHARMACOPŒIA, 1898.
ACIDUM HYDROCYANICUM DIL. 2 per cent.	
ACONITI RADIX. The root of the year. The whole root, without residue, to be employed in preparing the powder. <i>Tincture of Aconite.</i> Percolation with 70 per cent. alcohol; standardised to contain 0.05 per cent. of alkaloids.	Complied with. Collected in the autumn from plants cultivated in Britain. No mention of mode of preparing powdered drug.
BELLADONNE FOLIA. Dried leaves only. <i>Extract of Belladonna.</i> A dry extract prepared with 70 per cent. alcohol; to contain about 10 per cent. of water. <i>Tincture of Belladonna.</i> A 1 in 10 tincture prepared by percolation with 70 per cent. alcohol. Not standardised.	Fresh leaves and branches. Prepared from the juice of the fresh leaves and branches.
AQUA PHENOLATA. A 2 per cent. solution of phenol.	Not official.
AQUA LAUROCERASI. To contain 0.1 per cent. HCN.	Complied with.
COCAINE HYDROCHLORIDUM. The anhydrous salt.	Complied with according to the formula, but 1 per cent. of moisture is allowed. (P.G.V. requires that it shall flow scarcely any loss of weight on heating to 100° C.)
COLCHICI SEMINA. Only the seeds to be used. <i>Tincture of Colchicum.</i> A 1 in 10 tincture prepared by percolation with 70 per cent. alcohol.	Both corm and seeds are official. 1 in 5, with alcohol 45 per cent.
DIGITALIS FOLIA. The leaves of the second year; the powder to be prepared without residue. <i>Tincture of Digitalis.</i> 1 in 10 by percolation with alcohol 70 per cent.	"From plants commencing to flower." 1 in 8, with alcohol 60 per cent.

ERGOTA.

The sclerotium of the year, stored entire. These requirements are not given.

Extract of Ergot.

An aqueous extract made up with alcohol 60 per cent. Alcohol 60 per cent., water, hydrochloric acid, and sodium carbonate employed.

Liquid Extract of Ergot.

1 in 1.

HYOSCYAMI FOLIA.

The leaves only.

Complied with.

The fresh leaves and flowers, with the branches.

Extract of Hyoscyamus.

A dry extract prepared with 70 per cent. alcohol, containing 10 per cent. of moisture.

Not official.

Tincture of Hyoscyamus.

1 in 10 by percolation with alcohol 70 per cent.

1 in 10 with alcohol 45 per cent.

LIQUOR ARSENICALIS.

To contain 1 per cent. of arsenious acid.

Complied with.

IPECACUANHÆ RADIX.

The powder to be prepared from the root bark, rejecting the woody part; the powder to contain 2 per cent. of alkaloids.

These requirements are absent.

Tincture of Ipecacuanha.

1 in 10 by percolation with alcohol 70 per cent.

Not official.

Syrup of Ipecacuanha.

To contain 10 per cent. of tincture.

Not official.

NUX VOMICA.

To contain 2.5 per cent. of total alkaloids.

No alkaloidal content given.

Extract of Nux Vomica.

Prepared with alcohol 70 per cent. to contain 16 per cent. of total alkaloids.

Prepared by evaporation of the liquid extract; standardised to contain 5 per cent. of strychnine.

Tincture of Nux Vomica.

1 in 10 by percolation with alcohol 70 per cent. To contain 0.25 per cent. of total alkaloids.

Prepared from liquid extract; contains 0.24 to 0.26 per cent. of strychnine.

OPIMUM PULVIS.

Dried at 60° C. To contain 10 per cent. of morphine.

Dried at 100° C. should contain 9.5 to 10.5 per cent. of morphine.

Extract of Opium.

20 per cent. of morphine.

Complied with.

Tincture of Opium.

1 in 10 by percolation with alcohol 70 per cent. To contain 1 per cent. of morphine.

Maceration with alcohol 45 per cent. (about); contains 0.75 per cent. of morphine.

Tinctura Opii Benzoica.

To contain 0.05 per cent. of morphine.

Complied with in *Tr. Camphoræ* co.; contains nearly 0.05 per cent. of morphine.

Tinctura Opii Crocata.

1 per cent. of morphine.

Not official.

PULVIS IPECACUANHÆ COMPOSITUS.

10 per cent. of powdered opium.

10 per cent. of opium (see under Opium).

SODII ARSENAS.

The crystallised salt with 36.85 per cent. of arsenious acid.

The anhydrous salt.

SIRUP OF FERROUS IODIDE.

5 per cent. of anhydrous ferrous iodide.

7.25 per cent. of anhydrous ferrous iodide.

TINCTURE OF CANTHARIDES.

1 in 10 by percolation with alcohol 70 per cent.

1 in 80 by maceration with alcohol 90 per cent.

TINCTURE OF IODINE.

1 in 10 with alcohol 95 per cent.

1 in 40 prepared with pot. iodide (liq. iodi fort. is about 1 in 8), also prepared with pot. iodid.).

TINCTURE OF LOBELIA.

1 in 10 by percolation with alcohol 70 per cent.

Tinct. lobeliae aether. is 1 in 5 of spirit of ether.

TINCTURE OF STROPHANTHUS.

1 in 10 by percolation with alcohol 70 per cent. from seeds not freed from fat.

1 in 40.

UNGUENTUM HYDRARGYRI.

To contain 30 per cent. of Hg.

Contains about 48 per cent. of Hg.

VINUM ANTIMONIALE.

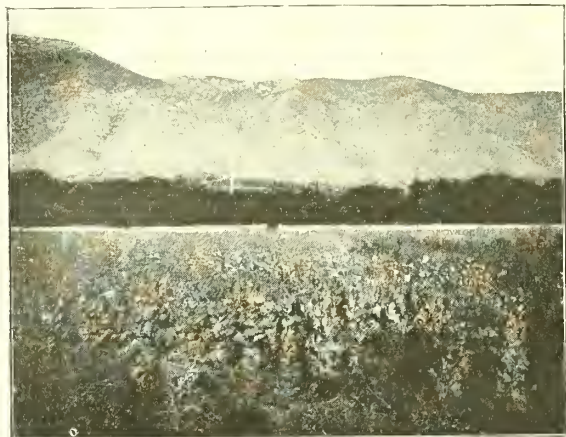
Contains 0.4 per cent. of tartar emetic.

Contains 0.45 per cent.

NOW THAT THE CHINESE is being gradually deprived of his opium, he is acquiring the tobacco-habit, with the result that at Foochow some American missionaries have started an agitation against the soothing weed, and have petitioned the Financial Commissioner to impose a prohibitive duty; this has, however, not yet been sanctioned.

Opium Cultivation in Turkey.

It cannot be said with certainty when the cultivation of the opium poppy commenced in Turkey, but the methods of growing it and the collection of the juice are no doubt much the same as when Dioscorides about A.D. 77



A FIELD PLANTED WITH POPPIES.

described exactly how the capsules should be incised. The illustrations which we now reproduce, however, are of interest, as they were taken for us a few weeks ago by Messrs. J. Taranto & Fils, opium exporters, of Smyrna. The first shows a cultivated field planted with poppies, and gives a good idea of the contour of the country. The preferable locations for cultivation are rich valley lands, the plains, and the foot of the mountains,



EXAMINING THE POPPIES PRIOR TO INCISION.

as the first picture shows. The principal sowings take place in the autumn, towards the close of September, those taking place in the spring being between February and April, and giving much smaller results. Before sowing, the seeds are mixed with sand and then sown broadcast over the fields, which have previously been roughly ploughed. Germination results in accordance with the altitude of the fields and moisture of the season. In about thirty days the plants are an inch high, and during November and December snow usually falls, covering the plants. Should, however, the snow melt quickly and a frost succeed, damage ensues, the poppy being one of the most delicate of crops when young. On the other hand, if the snow falls early and remains all winter, the poppy reaches perfection. After the snow melts in the spring and the plants have attained a height of about six inches, the fields are thoroughly weeded and the poppies thinned until they stand about two feet apart. When they are evenly distributed over the field in such condition the crop is

promising. Should, however, the winter frosts have "winter-killed" the crop in patches, the thin parts are re-ploughed and spring-sown. If the crop be injured as a whole the entire field is re-ploughed and spring-planted. The poppy blossoms in April and May, and the capsules mature from June to July. The elevated interior districts are the latest, but yield the best opium; that produced in the damp lowlands being poorest. When the plant attains a height of four to five feet, and the capsules begin to turn successively from bluish-green to yellowish or slightly golden they soften to the touch. This is a very critical period for the crop, and should the cutting



MAKING THE INCISION.

be neglected for even half a day, it is sufficient to decrease the yield. The second photograph shows the examination of poppies prior to incision, which takes place after sunset, the exuded juice being scraped off early the next morning. Should dew or rain occur in the interval there is little yield or none whatever. The act of incision is shown in the third illustration. It is an actuality that may replace the stock engravings which have been used so long. The incision is done with a knife having a fine saw-edge, the cut being made around the circumference of the capsule, encircling it to within half an inch of the starting-point. The incision requires an expert, the aim being only to pierce the outer portion



PEASANTS FORMING THE OPIUM INTO CAKES.

of the capsule that contains the lactiferous ducts, for should the cut penetrate to the interior the poppy "bleeds inwardly" and the juice is lost. When sufficient has been scraped off the juice is dried and shaped into cakes or blocks and wrapped in poppy-leaves. These are brought to market in Smyrna in tall baskets, as shown in the final illustration. The buying and selling of opium is quite another story.

From Turkey to Peking is a far cry, but it is not inappropriate to mention here that the correspondent of "The Times" at Peking communicates to his journal



BRINGING THE OPIUM TO MARKET IN TALL BASKETS.

(July 19) a long letter describing how the Chinese Republic has succeeded in totally suppressing cultivation of the poppy in China. The letter deserves the attention of all interested in opium.

The Chemist's Dream.

THREE stars shone out with a baleful glare.

Scarlet and green and blue,
And a medley of perfumes smote the air,
Lavender, musk, and rue.

And the chemist shook, for a nameless fright
Harried his evening walk,
And his face grew pale in the ghostly light,
Like camphorated chalk.

He was sick to death, he was sore afraid,
For he knew from his sense of smell
That he'd come to the dread phenacetin glade
Where the hæmogoblins dwell.

Swift and light as the wind-blown chaff
They crowded the path he trod,
With a shriek of joy and a ghoulish laugh
That cracked like a senna-pod.

He heard the patter of elfin shoes,
As he fled in that breathless sprint,
And he felt the grip of a deft-flung noose
Of salicylic lint.

They have trussed him tight with boric gauze
To a eucalyptus-tree,
With a loafah gag betwixt his jaws
And a bandage round his knee.

Cold ran his blood as a toilet-cream,
And the sweat like a perfume-spray,
When he saw the glycerophosphates gleam
And the trail of powders grey.

And he thought with grief of the life he'd led,
Of his homœopathic pills,
Of the times he had stolen a doctor's bread
Prescribing for coughs and chills;

Of the poor little babes who tossed and turned
In their eagerness to tootie,
Diminutive mites who yowled and yearned
For syrups that really soothe.

And he groaned as he thought of the stout and spare
Who'd sampled his makeshift stuff,
Of the bald old colonels who hoped for hair
On the strength of a printed puff.

Then away to covert the goblins race,
But the chief of the pigmy band
Draws near with a smile on his wizened face
And a nightlight in his hand.

The fuse is fired, the flamelets start
On their journey of spark and smoke—
When just at the really crucial part
Our own Poet Laureate woke.

Chas. E. London.

Jubilaus Carbonis Detergentis.

Some facts regarding the late William Valentine Wright, the business with which he was associated, and the speciality which he originated.

FIFTY years ago, when City of London merchants had their dwelling-houses over their business premises, there lived under the shadow of St. Paul's, at 11 Old Fish Street Hill, Doctors' Commons, a young couple who had been married in March 1849. They were Mr. and Mrs. William Valentine Wright. Three of their children (all daughters) were born in the house. Then the City Corporation required the premises for some street improvements, and they removed to The Grove, Clapham, where their first son, William Valentine Wright, jun., was born, as well as most of their family. Mrs. Wright, hale and hearty in her eighty-eighth year, lives now in her beautiful home at Bickley. It is to her excellent memory that we owe the information that her husband's place of business was not in Fish Street Hill, by the Monument, and we have confirmed the fact by reference to a record of 1832.

Mr. Wright was the originator of *Liquor carbonis detergens*, and it is just fifty years since he introduced



MR. W. V. WRIGHT.



MRS. W. V. WRIGHT.

Wright's Coal Tar Soap, which was distinguished from tar soaps up to that time in use by containing all the anti-septic constituents of coal-tar without the colouring matter which makes them objectionable for toilet purposes. Mr. W. V. Wright met an untimely death at Dundee in September 1877, when he was on a journey with his son Charles (since dead). He caught a cold in the face, which developed into erysipelas, and, the inflammation extending to the brain, he succumbed with great suddenness at the

age of fifty-one. He was a man of excellent physique and fine presence, and at the time of his death it was remarked that "he was in all respects a nineteenth-century man. His vigour and self-reliance created a business with surprising rapidity, and though he died long before old age the firm which he had raised from nothing to the very front rank seemed for many years to have lost all traces of newness and to have indicated its youth mainly by its energy."

Mr. Wright had been trained to the drug-trade in the establishment of Messrs. Grimwade, Ridley & Co., Ipswich, after which he came to London and was an assistant in John Bell & Co.'s pharmacy, Oxford Street. There he remained until his twenty-third year, when he got a partnership in an old-established business in Old Fish Street Hill, which from 1848 was carried on as Curtis & Wright until the changes afterwards referred to were made. As we have already indicated, the location of the premises is almost forgotten. There is now only one Fish Street Hill in the City of London. It begins in Eastcheap and ends opposite Billingsgate Fish Market, the Monument to the Fire of London overshadowing it. Centuries before this street existed, Old Fish Street, or Old Fish Street Hill, as it appears to have been called indifferently, was London's fish market before Billingsgate was appropriated for that purpose. Billingsgate had become a rival of Old Fish Street in the fourteenth century, because the fishing-boats had to shoot the arches of London Bridge in order to get to Queenhithe, where the wharf was on which was landed fish for the market in the old street lying between it and St. Paul's. By the time of Queen Elizabeth a "New Fyshe Strate" was shown by Aggas in his Map of London. Before Queen Victoria Street (which runs from the Mansion House to Blackfriars and to the Victoria Embankment) was begun in 1863, the territory between the River Thames and St. Paul's Cathedral was much steeper than it is now, as the names of streets going south and north testify, St. Andrew's Hill being one of them. Queen Victoria Street in its formation wiped out many old landmarks, and the premises occupied by Mr. Wright succumbed with others. He was a far-sighted man, as many of those who had been in Bell's seemed to be, and the 15,000*l.* compensation for disturbance which he got from the City helped him in building a fine range of warehouses in Southwark Street. To part of these (No. 50) he removed the business from Old Fish Street Hill. Before this happened the old residence had acquired a pharmaceutical reputation. Mrs. Wright remembers many pleasant visits of Jacob Bell, John T. Davenport, and other contemporaries of that day. The district was a drug-trade centre then; and Mr. James Curtis, whom Mr. Wright joined in partnership in 1848, was a wholesale druggist whose record we have been able to trace back to 1795, when, as James Curtis & Co., he was in business at No. 1 Ludgate Hill (a favourite place for druggists in the eighteenth century). In 1803 the business was carried on as Curtis & Griffin, and three years later Mr. Curtis was carrying it on by himself, but in 1808 he had a partner, and the firm-name was Curtis & Coar. In the course of time (1832) it had reverted to the first style, James Curtis & Co., and had been removed to 11 Old Fish Street Hill. Mr. Curtis was an elderly man when Mr. Wright joined him, and the firm-name became Curtis & Wright. Mrs. Wright has a clear recollection of his kindness to her as a young wife and mother, also of Mrs. Curtis, whom she remembers as a fine and dear old lady. Mr. Curtis retired, and in 1855 Mr. Wright's trading style was Wm. Valentine Wright & Co. He continued by himself until he was joined in 1860 by Mr. G. B. Francis, who had been a fellow-assistant with him in Bell's, and was then in Islington. As Wright, Francis & Co. the business was continued until 1866, when it became Wm. Valentine Wright & Co. once more, Mr. Francis having in that year become a partner of Hearon, McCulloch, Squire & Francis.

It was only about a year before he left Old Fish Street Hill in 1867 that Mr. Wright began to push liquor carbonis detergens, the soap, and other preparations of

coal-tar. At that period the medical journals began to note the efficacy of the preparation in the treatment of skin diseases, and it soon became a standard remedy, being included in almost every work on dermatology. The soap meanwhile had been growing steadily in repute, and Mr. Wright needed help in the drug department, so he took into partnership Messrs. Sellers and Layman, the firm becoming Wright, Sellers & Layman. This continued until early in 1876, when Mr. Sellers retired, and Mr. Charles Umney took his place, the style becoming Wright, Layman & Umney. When Mr. Wright died a year later the soap business was managed by his son William, Mrs. Wright retaining her interest in it until 1892, when she sold it to Messrs. Wright, Layman & Umney, the firm at that time consisting of Messrs. Charles Wright (since dead), Herbert Cassin Wright, Charles Noel Layman (since dead), Ernest Layman, Fred Layman, Charles Umney, and John C. Umney. The firm then made radical changes in the method of manufacturing soap by adopting the milling process in place of the old melting one, and about six years later the management of the Wright's Coal Tar Soap business was practically taken over by Mr. John C. Umney. Since then the business has been increasing by leaps and bounds, although it almost seemed that the world had room for no more toilet-soaps; but the multiplied output of Wright's has demonstrated the contrary. The business continued developing all round, and no change was made in its personnel until June 1899, when it was converted into a limited company, with capital of 100,000*l.*, Messrs. C. N. Layman, C. Umney, H. C. Wright, E. B. Layman, J. C. Umney, F. N. Layman, and E. A. Umney being the subscribers and first directors. The company's premises in Southwark Street had been supplemented by a factory in Park Street. Ten years later the company was converted into a public one, with capital of 135,000*l.* (of which 60,000*l.* in 6 per cent. preference shares was offered to and subscribed for by the public). The business was sold to this company for 125,000*l.* Mr. C. N. Layman and Mr. C. Umney retired at this time, so far as active participation in the daily routine of the business is concerned, but they and all the partners remained directors of the company, Mr. Charles Umney being chairman of the board. Since Mr. Layman's death in February 1910—indeed, since the reincorporation—Mr. Ernest Layman has not taken an active part in the management of the company; but all the others do, including Mr. Herbert C. Wright, Ph.C., one of Mrs. Wright's three surviving sons. He was apprenticed to Mr. Charles Umney in 1880; after which he went to Cardiff for a second apprenticeship (in the retail). Subsequently he studied at the School of Pharmacy, passing the Minor examination in October 1885, and the Major a year later. Mr. Wright looks after the buying part of the business, and is a regular attender on 'Change and in Mincing Lane on drug-sale days. We are indebted to him for the portraits of his father and mother. The former is from a photograph which was taken shortly before Mr. Wright's death, and a wood engraving from it was published in the *C. & D.*, December 15, 1877. The portrait of Mrs. Wright is recent.

HEXAMETHYLENETETRAMINE is less soluble in hot water than in cold; hence in preparing the solid it is better to evaporate the liquid to dryness than to allow the solution to stand to deposit crystals. Volatilisation to a large extent need not be feared.

SMOKING IN THE PHARMACY.—The Institution of Apothecaries in Buda-Pesth has sent a circular to each member, stating that a complaint has been made at the head office that the air in several pharmacies was filled with tobacco smoke, and that some of the powders sold had a decided smell of tobacco. Members are therefore requested to use their influence in seeing that the staff does not indulge in smoking in the pharmacy, otherwise a stricter prohibition extending to the adjoining rooms of the pharmacy will be issued. With regard to the smell of the powders, attention is called to the Ministerial decree of 1839, according to which the blowing open of powder papers with the mouth is forbidden. [The latter has reference to the practice of using powder papers already folded, but open at one end, which is usually blown open by the dispenser.—EDITOR.]

REVIEWS.

Industrial and Manufacturing Chemistry, Organic. By GEOFFREY MARTIN, Ph.D., M.Sc., B.Sc., etc., assisted by Specialists. 10 in. by 6 $\frac{3}{8}$ in. Pp. 726. 21s. net. (London: Crosby Lockwood & Son, 7 Stationers' Hall Court, E.C.4.)

THE title is comprehensive, but in the course of the twenty-three sections the author and his collaborators have condensed a great mass of information on the technical processes of organic chemistry. To give an idea of the extent of the work we propose to enumerate the subjects dealt with in the sections. (1) The oil, fat, varnish, and soap industry; (2) Sugar industry; (3) Starch industry; (4) Cellulose industry; (5) Fermentation industries; (6) Charcoal and wood-distilling industries; (7) Turpentine and rosin industry; (8) Industrial gums and resins; (9) Rubber industry; (10) Industry of aliphatic chemicals; (11) Illuminating gas industry; (12) Coal-tar and coal-tar products; (13) Synthetic colouring matters; (14) Natural dyestuffs; (15) Ink; (16) Paints and pigments; (17) Textile fibre, bleaching and waterproofing; (18) Dyeing and colour-printing; (19) Leather and tanning; (20) Glue, gelatin and albumen; (21) Modern synthetic and other drugs; (22) Modern explosives industry; (23) Photographic chemicals. Many of the sections are further subdivided, the first one, for instance, has thirteen sub-sections, each dealing with a definite part of the matter in the title which is more comprehensive than it appears. For instance, there are dealt with in this part the milk, butter, cheese, casein, condensed milk, milk-powder, and margarine industries, as well as synthetic perfumes and glycerin. The method of treating the subjects is on the following lines: first is given a list of books, then the imports and exports, an outline of the manufacture, containing definitions, then the details of the various processes. The classification is excellent, and the information given is the best of its kind, bearing in mind that so many secret methods of manufacture are employed. References to patent specifications are given as in many cases these are the only sources of information on new industries. The synthetic drug section consists of sixteen pages, and although it is little more than a catalogue the particulars given are accurate, while the list of books is an indication of where more extended references may be found. The book is a very useful one for reference purposes, and considering its scope and size is a good guinea's worth.

Dunn's Pure Food and Drug Legal Manual. Edited by CHARLES WESLEY DUNN, A.M., of the New York Bar. Pp. xxvi and 2347. (Published by Dunn's Pure Food and Drug Legal Manual Corporation, New York.)

THIS work, enormous in size, is the first of two volumes, of which the second will shortly appear. The volume deals with the various food and drugs laws and their administration in general, and Vol. II. will deal with food standards, special laws, and rules and regulations. Although of little value to those who are called upon to administer the Food and Drugs Acts here, this work is of much interest and importance considering the enthusiastic welcome accorded to it in the United States, and also in view of the fact that fresh legislation in regard to food and drugs must come to pass in this country before very long, and such legislation may in certain points follow the lines of the American Acts. An adequate review of this work is impossible; that would mean a critical comparison between American and English food and drug jurisprudence, and could only be accomplished by the use of far too much space. The work must therefore be summed up shortly. Briefly, then, we can say undoubtedly that it is a marvel of completeness in all the matters with which it purports to deal. Everything that one wants to know about food and drugs law in America is set out in full. But the waste of space is great. For example, the first 1,834 pages are divided into about 50 sections, each one dealing with the whole law

of the various States. We take at random the paragraph dealing with the "Scope of the Law." On page 3 we find under the Federal Act: "The provisions of this Act shall apply to all persons. The word person as used in this Act shall be construed to import both the plural and the singular, as the case demands, and shall include corporations, companies, societies, and associations." We then go through some 50 sections in which the same thing with variants is repeated. In one a "person" is not defined; in another it is defined as in the Federal Act; in another in a slightly different manner, and so on. Similar remarks would apply to a great deal of the subject-matter of fifty obviously similar Acts. As the Acts are all textually reproduced in the last 500 or so pages it would have been far wiser to take the Federal Act as the basis for commentary and deal with the variations, often trifling, often important, of the other Acts from the Federal Act as the latter is discussed section by section. A careful examination of the book leaves the impression that the chief failing of the United States Food and Drugs Law is the enormous amount of power in the hands of those who have to "interpret" it. The vexatious results of the Acts to honest traders are, of course, common knowledge.

Pharmacographia. By A. C. DAMBERGIS and T. KOMNINOS. Vol. II., 8vo, pp. viii + 868: Chemical Substances and their Preparations. Vol. III., 8vo, pp. viii + 539: Practical Pharmacy. (Athens, Greece, 1911-12.)

THESE volumes continue the Pharmaceutical Encyclopædia in Greek, the first volume of which was reviewed in these pages. In Vol. II, the preparation of each substance and its salts is given, their properties, tests, assays, uses, and doses, and also practically all official and many non-official English, American, French, German, etc., preparations, together with several formulas at the end of each substance, following somewhat the order of Hager. The substances are classified as follows:

Organic acids and their salts, alkaloids and their salts, hydrocarbons, sulphonic acids, halogens, alcohols, aldehydes, ketones, carbohydrates, ethers, esters, phenols and phenol ethers, amines, amides, albumins, glucosides, resins, and bitter principles, with a general index in Latin, English, French, etc., besides the one in Greek.

Vol. III. is divided into three parts. The first includes the operations used in pharmacy, such as:

Comminution, sifting, granulation, maceration, infusion, percolation, etc., sources and uses of heat, collection, drying and preservation of vegetable substances, sterilisation and disinfection. Weights and measures, analytical and pharmaceutical balances, sp. gr., hydrometers, thermometers, fusing, solidifying and boiling points, prescription-writing, solubility, incompatibility, doses, classification and sale of poisons, preservation and examination of drugs, official pharmacopœias, opening of a pharmacy, and pharmacy regulations.

The second portion includes:

(a) Pharmaceutical preparations, such as waters, liquors, spirits, tinctures, extracts, glycerites, honeys, elixirs, etc., plasters, papers, ointments, oils, powders, pills, suppositories, pessaries, etc., etc.; (b) gums, resins, balsams, oils, and fats; (c) sera, vaccines, microbiological products, and artificial sera; (d) organo-therapeutic preparations; (e) electrotherapy, light, and radiotherapy.

The third portion is a supplement and addendum, including:

(a) Book-keeping for pharmacists; (b) microscopic, polariscopic, and spectroscopic analysis; (c) qualitative and quantitative chemical analysis, reagents, indicators, etc.; (d) toxicological examination for volatile poisons, alkaloids, inorganic and organic substances, ptomaines, etc.; (e) analysis of urine, urinary sediments and calculi, gastric juice, pathologic liquids, blood, etc.; (f) toilet preparations, preparations for the hair and teeth, inks, insecticides, etc., and miscellaneous preparations.

Professor Dambergis is the author of several books on pharmacy and also of a Pharmacopœia which is recognised by the Greek Government as the official Pharmacopœia of Greece, and by the Cretan Government for the island of Crete.—*T. Ladakis.*



BIRD'S EYE VIEW OF THE WORKS
OF W. J. BUSH & CO., HACKNEY.

ONE day not long ago a foreign visitor to the *C. & D.* offices brought with him into the editorial rooms such a delicious odour that an explanation seemed necessary, and he told how he had been visiting the works of Messrs. W. J. Bush & Co., Ltd., at Hackney. "A wonderful place," he said. "I did not know there was such a place in England; huge stills for English essential oils, laboratories for the manufacture of synthetics, even one for experimental making of confections to illustrate the colours and flavours that Bush make. Here are some of them." The visitor opened a parcel, which contained tempting comfits and other Ash Grovian products. The incident may be linked with the present report of a visit this month by one of our own staff.

First, however, we may recall that this business was founded by Mr. William John Bush, a native of Westminster, who had been apprenticed to a physician in the West-end of London; but during the apprenticeship his tastes for chemistry and experiment were so developed that, instead of proceeding to the examinations of the Royal College of Physicians, he joined the staff of a firm in Great St. Helen's, in order to become acquainted with the chemical trade. He was only twenty-three when in 1851 he started in business for himself as a dealer in essential oils, and manufacturer of and dealer in essences and other products used by confectioners and in the aerated-water trade. Not very long after he acquired ground at Ash Grove, Hackney, and erected there the nucleus of the present factory, illustrated above, which covers nearly two acres of ground. The Bishopsgate Street premises becoming too small, he removed to Artillery Lane, where, in 1885, extensive additions were made, so that the premises became an ideal warehouse and office, no manufacturing whatever being done there from that time. Four of Mr. Bush's sons were associated with him in the business, and at the time of his death, in 1889, the eldest of these, Mr. William Ernest Bush, had been managing for some years, as his father was taking an active part in civic affairs. Others in the business then were Mr. Richard Arthur Bush, F.C.S., and Mr. James Mortimer Bush. Mr. Alfred W. Bush served an apprenticeship

with a firm of Colonial brokers, and remained in Mincing Lane for ten years before he joined W. J. Bush & Co.

The business continued to prosper under the management of the sons, and in 1897 it was disposed of to a limited company for 375,000/., the capital being 125,000/ each of debentures, preference and ordinary shares, the last-named being held by the Bush family. This conversion was the stepping-stone to even greater prosperity, for we find from our records that the net profit in the first year was 18,926/., with a dividend of 8 per cent., while the net profit in 1912 was 45,302/., and the dividend 12 per cent.

This is due to increased turnover, and the gross profit has increased from 63,951/., in 1897 to 142,964/., in 1912.

Simultaneously with the development of the business during the past fifteen years the means of distribution and transport have improved enormously, and a few years ago the company removed its office and warehouse staff from the Artillery Lane premises to Ash Grove, so that the whole of the business, manu-

facturing, distributing, and administrative, is brought under the eyes of the directors. Since the lamented death of the eldest son, Mr. W. E. Bush (chairman of the company, who was created a Baron by the Duke of Saxe-Coburg Gotha in 1889, and was thenceforth known as Baron de Bush), the management has been in the hands of Mr. James M. Bush and Mr. Alfred W. Bush, who have been managing directors since the formation of the company. With them are associated as directors Sir George Hayter Chubb, Bart., Mr. Robert Wigram, and Mr. Taylor. We may note that the Messrs. Bush were pupils of the late Professor Attfield when he was at Bloomsbury Square.

The company has many branches. During the founder's lifetime a factory for the manufacture of lemon oil was established at Vallagio, Messina, and it has been enlarged more than once. The company also has a branch at Grasse for the manufacture of floral pomades and other perfumery bases, as well as concretes, essential oils, and ottos. They acquired some years ago a distillery in Mitcham for the manufacture of peppermint,



MR. JAMES M. BUSH,
Chairman and Managing Director.



MR. ALFRED W. BUSH,
Managing Director.

lavender, and other English oils, and also became proprietors of Potter & Moore's Old English Lavender Water. More recently they have established a branch factory in Moscow, and they have branches in Montreal, Melbourne, and Sydney, as well as in Chicago. The New York branch, which was established in 1898, has since become a separate company.

A business of this nature, with so many industrial interests to serve, not only in the home of its origin, but in practically every civilised country on the globe, and accompanying business ramifications in many places, requires most assiduous and careful control. We were interested to learn from Mr. Alfred W. Bush that every Tuesday the directors hold a committee meeting, at which the heads of the de-

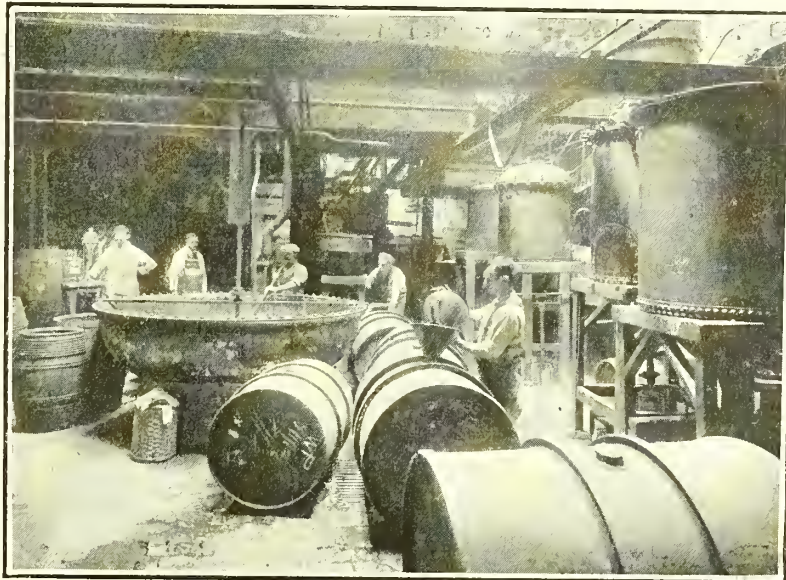
partments participate in the discussion of the business which is of direct interest to each of them. All reports and returns are considered at this meeting, so that every part of the company's enterprise is within the personal knowledge of the directors, while every department of Ash Grove is a distinct unit, efficiently managed, and as much energy put into its development as if it were the sole interest of the owners.

The warehouses are by no means the least interesting part of the Ash Grove premises. Our bird's-eye view of the place shows at the extreme left a building in which the offices are situated. To the right of this, with the

the sign there has been placed (since the bird's-eye view in our heading was made) a water-storage tank, quite as big as the *Olympic's* swimming-bath. This is for the water-sprinkler system of fire extinction that is installed throughout the works. The founder of the firm once had

a fire in the City factory which utterly destroyed it, and every possible precaution is taken against a recurrence. At the extreme right is a new well that the company has recently sunk, and behind this and the adjoining smith's shop is a series of railway arches, which has been acquired recently for additional storage and as a motor-garage. Our representative's inspection of the premises commenced with the warehouse, after a short chat with Mr. Alfred Bush in his room, the walls

of which are lined with pictures of the company's branches, exhibition awards, and a case of books, chiefly chemical and pharmaceutical. The ground floor of the warehouse is filled with the raw materials employed in the production of soluble essences and other flavours. "Raw materials" does not mean merely the crude drugs. Here are rows of 1,000-gal. vats, containing such articles as essence of raspberry, essence of strawberry, tincture of cascarrilla, essence of ginger, and so on. Each of these vats has attached to it a big tally upon which are given particulars as to the nature and origin of the contents, such as the quantity, when made, reference to



A GLIMPSE IN A STILL-ROOM.

The large steam-jacketed pan in the foreground is one of many, but they are chiefly in the galenical department



FRESH FRUIT-JUICE PRODUCTION.

The baskets have just been emptied of their strawberries, which are put into the hydraulic press, after which the juice is stored in the 1,000-gal. vats, of which two are seen on the left of the picture.

firm's name on the roof, is a block which comprises the warehouses, and behind these two are buildings which are devoted to manufacturing purposes. To the left of



A CORNER OF THE DRUG-GRINDING ROOM.

The apparatus on the right is the oscillating receptacle for sieves. Behind it is a roller mill, and a similar one is at the left corner.

the analytical laboratory's report, and so on. To this tally is added from time to time the amount of the contents removed, with the reference number, so that the amount taken out and the purpose can be traced at any time. This system is followed throughout the warehouse in respect to every article in stock, and we need scarcely

point out that the amount of any article in stock here can be told at any time—the tallies tell that. Mr. Bush mentioned, by the way, that the whole of the company's stocks are not stored here. They have stocks at the public wharves, at Mitcham, and so on, and stock is periodically conveyed from these to Hackney. Contiguous with this warehouse, and on the same level, is a lock-up floor in an adjoining building for the storage of essential oils, the value of which runs into thousands of pounds. There is a mammoth copper vessel full of peppermint oil as it is brought from Mitcham, and waiting here for re-distillation. Besides, we observed the oil in Winchester's, altogether a ton of it, some black, some white, and that at the present price means a lot of money. We estimated the value of the ol. menth. pip. ang. in one of the shelved divisions, and it came to 1,000l. A similar section contained twenty 2-kilo. bottles of essential oil of jasmín, which represents a little fortune; in another was 50 lb. of ol. limonis conc. (cost 8l. per lb.), and such items as citral and essential oil of ginger as they come from the still-rooms, exceedingly precious, so that there is scarcely one of these 2½ ft. by 1½ ft. sections (and there are dozens of them) which is not worth more than a chemist's shop. This strong-room also contains some articles which pharmacists rarely see—e.g., extracts of strawberry, raspberry, and pineapple, made on the premises from fresh fruit. By good luck our representative called in the strawberry season, and saw the process of obtaining the juice by hydraulic power in a press of about 25 sq. ft. area—most things at Bush's are on the huge scale. This juice after clarification has a sufficiency of alcohol added to preserve it, and is racked away by the thousand gallons to mature. So also with raspberry. The prevalent idea that fruit essences are entirely synthetic is erroneous; some are, but not all, and this House supplies the essences as Nature makes them, guaranteed to meet the rigid requirements of various countries as regards freedom from objectionable preservatives and synthetic strengtheners. The extracts referred to are made from the fresh juices; delicate and precious preparations they are, used in making comfits and other delicate products, the flavour and colouring of which puzzle compounders. The secret is Nature's alone. Our photographer was present when the condition precedent to the manufacture of these essences and extracts (arrival of the fresh fruit) could be caught. Before leaving the ground floor of the warehouse we observed scores of Winchester's chloroform, which the company have been making for some years.

A rapid walk through the first floor of the warehouse revealed an orderly arranged stock of crude drugs, chemicals, and other raw materials, all tallied and recorded, with the usual garbling of drugs in one of the corners of the floor. Above this is the perfumery department, where stocks of bulk goods are kept in aluminium tanks, a multitudinous variety of bottles in bins (each of which holds a crateful), and in a corner (literally) washing and bottle-drying arrangements so compact as to be time-saving as well as space-saving. Working stores of boxes, labels, and other finishing-off requirements are also here. The P. & M. lavender-water is an ever-present article on this floor, girls always packing it; but they have many other perfumes to bottle and pack, and bins of the finished goods ready packed for exportation line the walls of the floor. From this department there is an ingenious gravity conveyer, upon which the workers put boxes of goods selected to fill orders. The conveyer passes up over the roof, down into the packing-house in the next building, where the boxes are discharged to the packers, *facili descensu*, without breakage, and all by the push given to them in the perfumery-room. It is a great labour (*crgo* money) saver.

Before reaching the factory proper, which extends from the flag to the chimney and beyond it, we had a look in at the analytical laboratory. It is rather crowded at present, but it is being considerably extended by the removal of a manufacturing operation to another part of the works, and refitting of the vacated floor as an analytical laboratory. All kinds of goods bought or manufactured by the company on these premises or elsewhere are tested here before they are stocked. The results are recorded in detail, the

analytical factors and the observations of the chemists forming a mine of data from which many "papers" could be dug. These records are linked up with the commercial data, so that the "history" of any article sold can be got in a few minutes. Spirit estimations for drawback are also done here, and we glanced over a book that tells of about 2,600 such tests last year. Besides, in an inner room marked "Private," concrete perfumes, such as rose and violette de parme, are treated by skilled chemists, who can appreciate the costliness of the products they handle, some of them being worth more than their weight in gold. They come in kilo. and half-kilo. jars. It is in the treatment that their rare strength becomes manifest, for it is remarkable about perfumery that after a certain maximum of strength is reached the odour appears to diminish and change. We all know that civet becomes a perfume only when it is attenuated, and so is it with most odours.

Perhaps the grinding-rooms may be regarded as the beginning of the factory proper. Here the company prepare the woods and other materials ready for the stills. Some sandalwood from the last drug-sales was for our representative's delectation fed into an arrangement of a steel disc covered with knives that rapidly revolved, and the wood was showered as chips into a cupboard. These chips are then fed into a disintegrator, where the wood is converted into sawdust. Our photograph of a corner of a grinding-room illustrates the equipment of grinding-mills and sifting apparatus. Among the articles being pulverised on this occasion were turmeric and cream of tartar. The greatest care is, of course, exercised that colours and odours do not blend during the grinding process, this being effected in part by having separate rooms. The company grinds for the trade. A 150-h.p. engine supplies the power. The still-rooms contain many types of stills, some of them more than a thousand gallons in capacity. There are six huge cylindrical stills which are so high that the tops of them are on the floor above. Mitcham peppermint oil is rectified here. All the staple oils are made on the premises—e.g., caraway and clove—and other oils are "concentrated"—e.g., lemon and orange. The lemon is stored in 1,000-gal. vats. We find from reference to THE CHEMIST AND DRUGGIST, 1892, II., 639, that Messrs. W. J. Bush & Co. were making these concentrated oils then, when they were still little known, and the manufacture has been steadily growing since. It was this production which contributed so much to making aerated lemonade a bright beverage of true lemon flavour, without the terpene taste that characterised it thirty years ago. Many rare oils are also distilled. We recall the firm's production on a commercial scale of essential oil of laurel-leaves in 1892, and otto of elder in 1895. These may serve as examples.

Another part of the factory which is of great interest is that devoted to the production of synthetics. It is arranged in departments; in one, for example, fire heat alone is employed, and in another steam heat. As many of the processes are carried on *in vacuo*, there is a vacuum pump installation, with piping throughout the laboratories. In 1894 we reported that the firm had improved upon the synthetic geranium oil, which they had been making for some years before then. That was not the only product, and now there are scores, all the bases required for artificial flavouring and other essences, such as the amylc esters, being made on the premises, besides delicate synthetics which have so much contributed to the development of modern perfumery. Most interesting the processes are, some of them involving fractional distillation of extreme delicacy, besides chemical reactions which have to be controlled with great care. It is curious to observe the utility of the old alembic, and how much the bomb is required in some of these operations. Of the galenical laboratory we need say little; it is big and steamy, resembling in all respects the steam laboratories of wholesale drug houses, for extracts and percolates are requisites in essence-making. Our picture exhibits the scale of the operations. We had also the opportunity of inspecting the experimental confectionery house, where are kept specimens, made by the firm's expert, of all the sweets

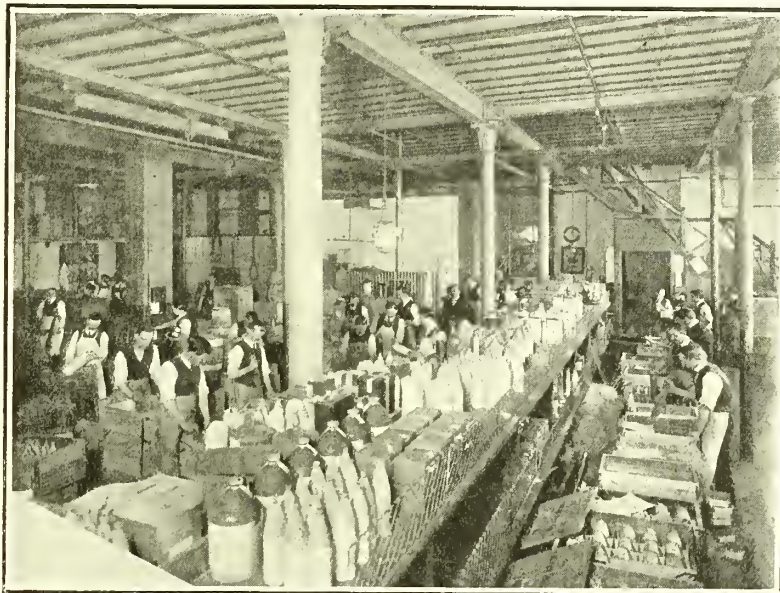
and comfits that may be made with Bush colours and essences. The purpose of this department is to perfect working formulæ for confectioners, and to work new ideas into practical shape. Then we were shown figs and bananas made with Bush materials, which are so

like the natural thing in taste that a blind man could not tell that they are artificial: the miniature size of the banana being the only difference from the natural. There is also an experimental mineral-water factory for perfecting formulæ for beverages; a specimen of aerated ginger-beer was sampled, the flavour of which is exactly that of "stone ginger." The company's staff of qualified chemists includes Dr. P. C. C. Isherwood, a graduate of Würzburg University, who is an adept in synthesis; Mr. J. O. Braithwaite, the editor of the "Year-book of Pharmacy"; and Mr. W. Sharpe Gill, who is well known in pharmaceutical circles.

After a walk through the "outworks," so to speak, we inspected the new well which the company has sunk to a depth of 250 feet (it is about 10 feet in circumference). It is to provide them with 14,000 gallons of water per hour. It is not many feet from the old well, which was most erratic in its yield, and could never be relied on. The well-house is a finely finished structure, and the well-mouth is of glazed white brick. Pumping is done with an electric motor. We also visited the

kava, piles of sandalwood logs, and barrels of fruit juices. The arches are capacious and spacious. They were formerly used as a horse infirmary, but the advent of the motor killed that business. The company's buildings contain similar testimony. The stables had stalls

for sixteen horses, which were used for the conveyance of goods to and from the premises, and they were wont to hire as many more horse-vans for delivery. Now they have not a single horse; the stables are used as stores, and the van-house served as a garage until the motors became too bulky for it. These released premises will shortly be occupied with manufacturing operations—chiefly stills. This transition has occurred in the past seven years. We may note that there are tram-rails



PACKING DEPARTMENT.

Goods from all parts of the establishment in foreground. All orders are assembled here and packed for home despatch or export.

from the arches to the factory for the internal conveyance of goods.

Somewhere during the tour of inspection we went through a printing house, where names are put on labels and other odd jobs are done. This is a business in itself. The buildings surmounted by the Union Jack, and to the right of them, were the last inspected. The ground floor contains the warehouse and packing-rooms. We give a picture of the latter, showing how the goods are assembled for home trade and export. The first floor and the rooms adjacent are used for compounding soluble and other essences, filtering



FRUIT-ESSENCE COMPOUNDING DEPARTMENT.

Contrast the scale of operations with those in the opposite engraving.



A CORNER OF THE ANALYTICAL LABORATORY.
This department is being much extended.

railway arches that the company has recently acquired. One of them is big enough to hold four five-ton motor-lorries, and three of them are used as a garage, the lorries coming straight in from the street. The other arches are used for storage; we noted bags of kava-

cils, and doing other operations closely allied to the pharmaceutical. The packing of such products is peculiar to the firm—e.g., pound bottles are wrapped in corrugated paper and finished off in cone-like style at the top. The "Winchesters" used by the company contain nearer 10 lb. than 5 lb., we believe. These originated

with the founder of the firm, and are several inches taller than the old-fashioned Winchester, therefore of the right circumference for handling. We were astonished at the numbers of labels that are stored, a whole wall of the warehouse being lined with cupboards which contain hundreds of labels ready for use, and each represents an essence made by the company. The labels



ONE OF THE PACKING FLOORS.

Here essential oils, soluble essences, and allied products are packed and finished off in the distinctive manner shown in the group of packages in front of the table to the left.

are lithographed in colours and gold. They are bought by the million, and the company prints the names of the essences on them as required.

Lastly we had a walk through the office, which has a gallery above the main office, a section of which is reserved for letter copying (by the rotary system) and filing, each letter and its reply being filed together in such a way that one of the three girls engaged on the job can find it in a fraction of a minute. The telephone booth is here also; it is departmental and external. The main office is partitioned off into departments, according to the nature of the business transacted. There are numerous private rooms, occupied by the directors and other members of the executive staff. Besides, each department throughout the works has an office for the head, and altogether about three hundred are employed at the works, but the company's pay-roll is much larger than that number, as scores more are employed at the various branches. Altogether, the Ash Grove equipment is thoroughly modern. The technical work done in it is of a character that few are aware of, and it is a credit to the British Empire that such a factory exists in its capital.



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[Historical Medical Museum.

XVIII-CENTURY DAVENPORT PHARMACY POTS.

These have a view upon each, and have developed a beautiful roe-tint with age.

Egyptian Government Laboratory Report.

IF Englishmen had done nothing else in the world's history than occupy Egypt, their work alone in that country would entitle them to a page writ in letters of gold. Rudyard Kipling revealed Sergeant What's His Name as the man who was vertebrating the Egyptian "Tommy," and Lord Kitchener has recently shown the kind of individual spokes that are stiffening the administrative wheel of Egypt to-day. One of these spokes lies before us in the shape of the Annual Report of the Chemical Laboratories for 1912, and is an instance of quiet work being done in the cause of civilisation. One of the curses of Egypt is the tribe of parasites and cheats—usurers and adulterators—who have battered on the ignorant and oppressed fellah in the past, and who are being exposed, slowly but surely, by agencies such as the chemical laboratory. The director of the Egyptian Chemical Laboratories is Mr. A. Lucas, F.I.C., an Englishman, formerly of the Government Laboratory, and his report is one long chapter of exposure of imitation and inferiority and detection of fraud. The old trick of sending goods not up to sample goes on with the same old hardihood. Contractors dispute the findings of the chemist and aver that there has been no substitution, but the force of evidence compels them to qualify their denials by the statement that the substituted article is equally satisfactory. An example of this was a case in which the platinum in electric-bell pushes had been replaced by silver by the contractor, the obvious reason being that the difference between the price of the two metals is £E.9 per oz. In another case candles manufactured especially for use in hot climates were tested in a hot-air oven at a temperature of 120° F. for three hours, and at the end of the test only the wicks remained. A good stearine candle should show only a small amount of "sweating." The total number of analyses and examinations made in the laboratories during the year amounted to 4,927, as compared with 4,482 made during the previous twelve months. The samples examined chemically numbered 2,076, as compared with 1,837 in 1911. Like the work of the Government Laboratory in this country, much of the work consists in examining goods supplied on contract to the various Government departments, and in consequence is of a very varied description. There is no Excise in Egypt, and advantage is taken of this to place on the market all sorts of spirituous beverages with labels and descriptions that are false and misleading. This matter has been under investigation during the year. We note that 54 per cent. of the samples of turpentine examined were condemned as adulterated. Purely Egyptian matters relate to an investigation of the nature of the black glaze and the black colouring on prehistoric and old Egyptian pottery. The former was found to be due to the use of wood-ashes and magnetic oxide of iron; the ashes supplying the alkali, and the magnetic oxide of iron, which is very plentiful in Egypt, giving rise to the black colour through the formation of ferric and ferrous oxides. The black colour on the black-topped non-glazed pottery was proved to be due entirely to carbon. Portions of a mummy from a Roman cemetery were examined to see whether the black preservative material was bitumen. It was found, however, to be a resin. Mr. Lucas has also published during the year a paper on the "Natural Soda Deposits in Egypt"; and one of the chemists attached to the laboratories has reorganised the Assay Office and the system of Hall-marking jewellery, an important matter in a country where the purchase of jewellery is a form of investment much practised by the poorer classes. The pure nitric acid required by the Office is purchased in Germany.

In 1854 the Royal College of Physicians, London, applied to the Council of the Pharmaceutical Society for aid in the preparation of a new Pharmacopoeia. Fellows of the College were entirely dependent on chemists and druggists as dispensers of their prescriptions.

LONDON WHOLESALE IN 1863 AND NOW.

The Jubilee of the British Pharmaceutical Conference invites retrospection and has prompted us to find out how many of the London wholesale druggists and chemical houses of fifty years ago have survived till now. The result shows that fifty firms which existed in 1863 are now represented by thirty-three businesses. In the following survey the styles of the firms fifty years ago are in italics.

ALLEN & HANBURY, LTD.,

Plough Court, 37 Lombard Street, E.C.; 7 Vere Street, Cavendish Square, W.; and 48 Wigmore Street, W. Works, Three Colts Lane, Bethnal Green, E.; Ware, Herts.

Allen & Hanburys, pharmaceutical chemists and wholesale and retail druggists, 1, 2, and 3 Plough Court, Lombard Street, E.C.

Founded in 1715 by Silvanus Bevan in Queen Street, Cheapside. In 1736 his brother Timothy had joined the firm, and the premises were at Plough Court. Silvanus retired in 1764. Timothy had three sons, one, Joseph Gurney Bevan, succeeding his father on his retirement in 1775. In 1794 the business passed to Samuel Mildred, and in 1795 William Allen (first President of the Pharmaceutical Society, who had been apprenticed to J. G. Bevan) was admitted a partner, when the style of the firm became Mildred & Allen. Mildred retired in 1797, and Allen took Luke Howard into partnership, the name being altered to Allen & Howard, which was the style till 1809, when Howard took over a manufacturing laboratory which Allen had established at Plaistow (it was then moved to Stratford). The firm was then William Allen until 1818, when it became W. Allen & Co., and Allen, Hanburys & Barry in 1826. The Hanburys were nephews of William Allen, their names being Daniel Bell Hanbury and Cornelius Hanbury. John Thomas Barry was apprenticed to the firm in 1804, and first (in 1817) applied the principle of evaporation *in vacuo* to the manufacture of extracts. Barry retired in 1856 (he died in 1864), and the firm became Allen & Hanburys. William Allen, who was elected F.R.S. in 1807, died in 1843. Daniel Bell Hanbury retired in 1868 and died in 1882. He was Treasurer of the Pharmaceutical Society from 1852 to 1867. His eldest son, Daniel Hanbury (born 1825), was subsequently a partner. He was elected F.R.S. in 1867, was for two years President of the British Pharmaceutical Conference (1868-69), and retired from business in 1870. He is best known for his "Pharmacographia," which, in conjunction with Flückiger, he brought out in 1874. Cornelius Hanbury died in 1869; his son Cornelius, M.R.C.S., who succeeded him as head of the business, is now living in retirement. His son is Mr. Frederick Janson Hanbury, who has two sons also in the business—Mr. Reginald J. Hanbury, M.R.C.S., L.R.C.P., and Mr. F. Capel Hanbury, Ph.C. The business was converted into a limited company in 1894 with a capital of 75,000l., Mr. W. Ralph Dodd, Ph.C., F.C.S., being associated in the directorate.

STAFFORD ALLEN & SONS, LTD.,

Cowper Street, E.C., and Long Melford, Suffolk.

Stafford & George Allen, drug-grinders, 7 and 8 Cowper Street, E.C.

Founded in 1833 by Stafford Allen (nephew of William Allen, first President of the Pharmaceutical Society) and Charles May, an Amptill druggist, as May, & Allen at Cowper Street, then known as North Street. Mr. May retired in 1843, and George Allen became a partner with his brother Stafford. George Allen left London in 1857 to manage the manufacturing business at Amptill, which had been established by Charles May and was carried on in connection with the London business as George Allen & Co. Stafford Allen's second son, Edward Ransome Allen, took George Allen's place in London, and when Stafford Allen retired in 1871 (he died in 1889) William Clarkson Allen, another son, who had been with

the firm since 1863, was admitted a partner. Mr. Edward Watlock Allen, son of E. R. Allen, became a partner in 1892, and Mr. Malcolm W. Allen, son of W. C. Allen, in 1896. The business was converted into a limited company in 1899 with a capital of 50,000l., with the partners as directors. Mr. W. C. Allen died in 1908 and Mr. Malcolm W. Allen in 1903. Mr. Kenneth C. Allen, another son of Mr. W. C. Allen, is also a director.

APOTHECARIES' HALL,

Water Lane, Blackfriars, E.C.

Retains its name and occupies the same premises to-day.

The Apothecaries' Company received its charter in 1617 on separating from the Grocers' Company. Since then apothecaries have become full-fledged medical practitioners after years of constant striving, and the word "apothecary" has lost its dictionary meaning. It is stated that during the plague of London, when the physicians fled to the country the apothecaries took on their duties, and so obtained their first claims to attend the sick. The Company have the power "to search, seize, and destroy bad drugs," and seem to have used it up to comparatively modern times. At the British Pharmaceutical Conference in 1869 one of the speakers said he remembered as a young man a visit paid by the censors to the place of business in Fleet Street where he was then. On one occasion they condemned drugs obtained from their own Hall, and on another occasion an aggrieved druggist obtained 600l. damages from the Company. The laboratory was erected in 1671 as a separate company, but eventually the shares were bought back by the Apothecaries' Company. At first drugs were only sold to apothecaries, but large sums were made out of contracts for the supply of drugs to the Navy and the East India Company. The retail shop was opened in 1822, but as the whole of the drug premises are in the hands of house agents it is probable that abandonment of "shop" or removal is in contemplation.

BAISS BROTHERS & STEVENSON, LTD.,

174, 175, and 176 Grange Road, Bermondsey, S.E.

Baiss Brothers & Co., drug merchants and wholesale druggists, 102 Leadenhall Street, E.C.

The old firm was founded in 1833, but previously W. Arnold Baiss (father of Mr. Arnold Baiss) was a partner with Drew, Heywood & Baiss, 21 Great Trinity Lane, E.C. The other brother, James Baiss, joined W. A. Baiss in 1833, the business being started in Leadenhall Street. Both were founders of the Pharmaceutical Society. The business was afterwards moved to Jewry Street, and in 1910 the City premises were given up and the business concentrated at the Grange Road laboratories. In 1899 the firm amalgamated with Messrs. H. E. Stevenson & Co., Southwark Street, S.E., the business being converted into a limited company in 1900 with a capital of 100,000l. Mr. H. E. Stevenson resigned his directorship in 1912 and started business at 122 Great Suffolk Street, S.E.

BATLEY & WATTS,

18 Wellclose Square, E.

Battley & Watts, wholesale druggists, 32 Lower Whitecross Street, E.C.

The business was founded by Richard Battley, who was born at Wakefield in 1770. He became an assistant surgeon in the Navy, and about 1800 acquired an apothecary's business at 79 St. Paul's Churchyard, London, which had been established in 1788. He had various partners, and in 1810 started a wholesale business as Battley & Churchyard at Whitecross Street, and

subsequently at Fore Street. He was a founder of the Pharmaceutical Society. He began to put his liquid extracts of opium, cinchona, and ergot on the market in 1818. In the 'fifties he took into partnership W. M. Watts, Ph.C., and the style of the firm became, as at present, Battley & Watts. Richard Battley died in 1856. The business was removed in 1911 to 18 Wellclose Square, E.C.

JOHN BELL, HILLS & LUCAS, LTD.,

Wholesale Druggists, Oxford Works, Tower Bridge Road, S.E.

John Bell & Co., pharmaceutical chemists, 338 Oxford Street, W.

Founded in 1798 by John Bell at 338 Oxford Street (renumbered 225), whose son, Jacob Bell (1810-1859), was founder of the Pharmaceutical Society. The partners in 1819 were John Bell, Thomas Zachary, and John E. Walduck, and the association continued till 1836 (Walduck started in business in Bond Street), when the partners were John, Jacob, and Frederick John Bell (the latter two brothers). In 1849 Jacob Bell was sole partner. He was President of the Pharmaceutical Society from 1856 to his death in 1859. Thomas Hyde Hills joined the business as an assistant in 1837, and became a partner when Frederick Bell retired in 1852. John Bell died in 1849. When Jacob Bell died in 1859, Thomas Hyde Hills, who was President of the Pharmaceutical Society from 1873 to 1876, became the sole proprietor, and his nephew, Mr. Walter Hills, who entered the business in 1871, became proprietor, with Mr. Samuel Gale, on the death of his uncle in 1891. Samuel Gale died in 1893, and Walter Hills became sole proprietor. He was President of the Pharmaceutical Society from 1896 to 1899. In 1908 great changes took place. The wholesale and retail businesses were separated. The former was made into a limited company, with a capital of 15,000*l.*, under the name of John Bell, Hills & Lucas, Ltd., and in 1909 moved to Oxford Works, Tower Bridge Road, the directors being Messrs. Walter Hills (chairman), E. W. Lucas, and J. Stuart Hills. The retail portion was amalgamated with the old-established business of Croyden & Co., Ltd., under the name of John Bell & Croyden, Ltd., with a capital of 12,500*l.* The combined business was moved to 50 Wigmore Street, W., into premises which have the reputation of being the finest pharmacy in London. The directors are Messrs. Walter Hills, John D. Marshall (managing director), E. W. Lucas, and J. R. Wretts.

THE BRITISH DRUG HOUSES, LTD.,

22 to 30 Graham Street, N.

Barron, Harveys, Becket & Simpson, wholesale druggists, 6 Giltspur Street, E.C. (1).

James Bass, pharmaceutical manufacturer, 81 Hatton Garden and 2½ Leather Lane, E.C. (2).

Davy, Macmurdo & Co., wholesale druggists and manufacturing chemists, 100 Upper Thames Street, E.C. (3).

Drew, Barron & Co., wholesale druggists, 1 to 7 Bush Lane, E.C. (4).

Hearon, McCulloch & Squire, wholesale druggists, 5 Coleman Street, E.C. (5).

Arthur S. Hill & Son, wholesale druggists, 11 Little Britain, E.C. (6).

Hodgkinsons, Tonge & Stead, wholesale druggists and merchants, 21 Lambeth Hill and 213 Upper Thames Street, E.C. (7).

The changes in the various firms before the incorporation of The British Drug Houses, Ltd., in 1909 are indicated in the following seven chronological records:

(1)

1792. Baldwin & Co., Giltspur Street.
1792. Baldwin, Hernon & Langton. Hernon had been a partner of Kempson & Hernon, Snow Hill.
1795. Hernon, Langton, Harvey & Beekwith.
1804. Hernon, Langton, Harvey, Beekwith & Barron.
1808. Hernon, Langton, Harvey, Beekwith & Co.
1814. Harvey, Beekwith, Barron & Co.
1820. Beekwith & Barron.
1827. Beekwith, Barron & Harvey.
1829. Barron, Barron & Harvey.
1830. Barron, Barron, Harvey & Co.

1837. Barron, Harvey & Barron.
1840. Barron & Harvey.
1850. Barron, Harvey & Co.
1851. Barron, Harveys, Becket & Simpson.
1876. Barron, Harveys & Simpson.
1880. Barron, Harveys & Co.

1889. W. L. Howie admitted a partner, and the business of Barron, Squire & Co. acquired [*vide* (4)].
1891. Charles Harvey died, and his son Ralph came in.
1896. Edward Harvey died, and his son Roger succeeded him.
1899. R. B. Barron died.

(2) Jas. Bass started business at 76 Bond Street in 1821, and in 1829 moved to 78 Hatton Garden. He was a founder of the Pharmaceutical Society. The business became James Bass & Sons, and was absorbed by Barron, Squire & Co. [*vide* (4)].

(3)

1760. Taylor & Davy, 52 Little Britain.
1794. Taylor, Davy & Taylor, 46 Finsbury Square.
1802. T. Davy & Co., 4 Gould Square. The works were at Horney Lane, Bermondsey.
1807. T. Davy & J. Roberts.
1818. Davy, Son & Mends.
1824. Thos. Davy & Co.
1825. Davy, Son & Drew.
1829. Davy, Macmurdo & Pitchford.
1830. Davy, Macmurdo & Co., Old Swan Lane.
1862. Francis Yates came

in. He had been in the business of Yates & Burgess, Budge Row.
1866. Davy, Yates & Routledge.
1870. Removed to Park Street.
1874. Robert Yates came in.
1894. Davy, Yates & Hicks (Alan Hicks joined).
1896. Davy, Hill & Son, Yates & Hicks [amalgamated with (6)].
1902. Davy Hill & Co.
1906. Davy, Hill & Hodgkinsons, Ltd.

(4)

1829. Drew & Co., 22 College Hill.
1832. Drew, Hayward & Baiss.
1856. Drew, Hayward & Barron.
1863. Drew, Barron & Co., Bush Lane.

1871. Barron, Squire & Co. — Acquired the business of James Bass & Sons [*vide* (2)].
1880. Absorbed by Barron, Harveys & Co.
1889. Frederick Barron died.

(5)

1714. Kirk, an apothecary.
1769. Bartlett & Sharpe.
1786. Hardwick, Moon & Sharpe, 95 Bishopsgate Street.
1794. Sharpe, Kirk & Weston.
1795. Sharpe, Kirk, Gratton & Hearon.
1800. Sharpe, Kirk & Co.
1802. Kirk, Gratton & Hearon.
1807. Kirk, Hearon & Bright.
1820. Kirk, Hearon, Bright, & Milnes.
1827. Hearon, Bright & Johnson.

1831. Hearon, Bright & Co.
1831. Hearon, Bright & McCulloch.
1843. Hearon, McCulloch & Squire.
1860. Moved to 6 Coleman Street.
1866. G. Baggett Francis joined firm.
1867. W. McCulloch died.
1870. Hearon, Squire & Francis.
1890. Moved to 38 and 40 Southwark Street.
1899. Limited company formed.

(6)

1755. Dalmahoy, Ludgate Hill.
1780. W. Stock, 12 Ludgate Hill.
1802. W. Stock, 22 Ludgate Hill.
1812. J. N. White.
1814. White & Cautherley.

1826. White, Cautherley & Hill, 22 Ludgate Hill and 11 Little Britain.
1838. A. S. Hill, Little Britain.
1849. A. S. Hill & Son.
1896. Amalgamated with Davy, Yates & Hicks.

(7)

1762. Samuel Chamberlain, Bride Lane.
1794. S. Chamberlain, 90 Fleet Street.
1802. Chamberlain & Rugg.
1805. Chamberlain, Rugg & Hodgkinson.
1807. Rugg, Hodgkinson & Brandram.
1814. Hodgkinson, Brandram & Co.
1815. Moved to 213 Upper Thames Street.
1837. Hodgkinson, Stead & Tonge.
1838. Hodgkinsons & Tonge.

1849. Hodgkinsons, Tonge & Stead.
1867. Hodgkinsons, Stead & Treacher, moved to Aldersgate Street.
1880. Aldersgate Street premises burnt down.
1881. Laboratories moved to Whitecross Street.
1887. Hodgkinsons, Treacher & Clarke.
1892. Hodgkinsons, Clarke & Ward.
1906. Amalgamated with Davy, Hill & Hodgkinsons, Ltd.

The British Drug Houses, Ltd., was formed on January 1, 1909, with a capital of 200,000/. The directors now are Messrs. George Bult Francis, Alan Francis, R. K. Harvey, Roger Harvey, Alan Hicks, C. A. Hill (managing director), C. Hodgkinson, W. L. Howie, and W. A. H. Naylor.

BURGOYNE, BURBIDGES & Co.,

Coleman Street, E.C., and East Ham, E.

Burgoyne & Burbidges, wholesale and export druggists, 16 Coleman Street, E.C.

Founded in 1741 by Thomas Fynmore at 65 Aldersgate Street. At the beginning of the nineteenth century the firm moved to 31 Throgmorton Street, and the style was Fynmore & Palmer. In 1812 Richard Hotham Pigeon, who had been apprenticed to the firm, was admitted a partner, the firm becoming Fynmore, Palmer & Pigeon, and afterwards R. H. Pigeon & Son. Pigeon was the first Treasurer of the Pharmaceutical Society, and was also Treasurer of Christ's Hospital. He died in 1851, and his son, of the same name, who succeeded him, died in the following year, leaving Mr. Burgoyne the sole partner. He took into partnership Thomas and Frederick Burbidge, and the firm became Burgoyne & Burbidges. In the late 'sixties Dr. W. S. Squire, eldest son of Peter Squire, became a partner, the style becoming Burgoyne, Burbidges & Squire. He reorganised the laboratory, but the partnership ceased in 1870, when he branched off into chemical industry. Julius Cyriax and Thomas Farries were admitted in 1876, having previously been partners as drug-brokers; but Mr. Farries had been trained in Burgoyne's laboratory under Dr. Squire. The firm now became Burgoyne, Burbidges, Cyriax & Farries. Mr. Cyriax died in 1892, and the death of the brothers Burbidge left Mr. Farries the sole proprietor. The style of the firm became Burgoyne, Burbidges & Co., as at present. Mr. H. R. Arnold, Mr. Chas. S. Webb, and Mr. Gerald R. Moxon were subsequently admitted partners. Mr. Webb died in 1900, and since then Mr. R. G. Halstead has been admitted to the partnership. The magnificent new works at East Ham were described in the *C. & D.*, January 30, 1909.

CORBYN, STACEY & Co., LTD.,

673 Commercial Road, E.

Corbyn, Messer, Stacey & Co., wholesale and retail chemists and druggists, 300 High Holborn, W.C., and 7 Poultry, E.C.

Darby & Gosden, pharmaceutical chemists and wholesale druggists, 140 Leadenhall Street, E.C.

W. H. Bucklee, pharmaceutical chemist, 68 New Bond Street, W., and 308A Oxford Street, W.

Taylor Brothers, manufacturing and dispensing chemists, 4 Vere Street, Oxford Street, W.

The business was founded before the Fire of London (1666). An old mortar, dated 1658, still in use, has probably been in the business since it was cast. In 1741 Thomas Corbyn was doing a very large trade with what is now the United States. He had a partner, an apothecary, Morris Clutton (originator of Clutton's febrifuge), who died in 1755, the firm being then in Holborn. A Stacey joined the firm in 1772, but in 1789 the style was Thomas Corbyn & Co. In 1795 it was Corbyn, Stacey & Messer, and subsequently Swaine and Beaumont appear at different times as components of the firm's name. In about 1850 the business at 7 Poultry was bought from Winstanley & Son, where it had been established since the Fire of London. Two Winstanleys were founders of the Pharmaceutical Society. Since the eighteenth century partners at various times were Hanrott, Burkitt, and Tickell. At the time Winstanley's business was bought that of George Butler, of Cheapside, was acquired and added. Later that of Darby & Gosden was bought and transferred to the Poultry. Stephen Darby died in 1911. In 1894 the Poultry business was sold to Mr. A. W. Waring, and by him transferred to 3 Bucklersbury, E.C. He died this year, and Messrs. Poingdestre & Truman have bought the business. The West-end retail shop at 86 Bond Street was formed in the 'seventies by the

purchase of the businesses of Bucklee and Taylor Brothers. This was disposed of to Mr. Frank A. Rogers in 1894, and transferred to 327 Oxford Street. Mr. Rogers is a councillor of the Pharmaceutical Society. The retail business at 51 High Holborn was sold in 1897 to Mr. M. Curtis. The wholesale laboratories continued at 300 High Holborn until 1908, when they were moved to Commercial Road. A City office at 22 Great St. Helen's was taken in 1894. The business was formed into a limited company in 1898 with a capital of 50,000/.

GEO. CURLING, WYMAN & Co.,

58 and 59 Bunhill Row and Featherstone Street, E.C.

Geo. Curling & Co., wholesale druggists, 16 Cullum Street, E.C.

Westwood & Hopkins, wholesale druggists, 16 Newgate Street, E.C.

John Wyman, export druggist, 122 Fore Street, E.C.

First of all, John Wyman and Westwood & Hopkins were amalgamated to form Wyman & Westwood, and in 1896 Geo. Curling & Co. and Wyman & Westwood united under the present style of the firm. The Westwood & Hopkins firm had been in Newgate Street for many years. In 1788 the firm was Bury & Wood, in 1795 Bion Bury, in 1800 Bury & Westwood, in 1813 Westwood & Bury, in 1821 Westwood, Bury & Westwood, and in 1832 Westwood & Sons, always at 16 Newgate Street. The Westwoods referred to in the last style of the firm were Robert Westwood (father and son) and W. H. Westwood. Thomas Hopkins was afterwards taken into partnership. Geo. Curling, who died in 1907, founded Geo. Curling & Co. about 1850. He retired in 1883. The present partners are Mr. Frederick Shaw and Mr. Chas. A. Dunn.

DAKIN BROTHERS, LTD.,

82 Middlesex Street and Cobb Street, E.C.

Dakin Brothers, wholesale and export druggists, 23 Abchurch Lane, E.C.

Founded in 1814 by W. Brydon, chemist and druggist, at 78 Cornhill, E.C. In 1819 the business became W. Brydon & Co., wholesale druggists, and in 1828 it was removed to Abchurch Lane. Thomas Dakin entered the firm as an assistant. In 1850 the business was acquired by Thomas Dakin, who was afterwards joined by his brother Joseph, when the firm was Dakin Brothers. Thomas Dakin was previously in business in 1841 at 78 King William Street. He retired from the firm in 1867, became Lord Mayor of London in 1870, and received a knighthood. He was first President of the United Society of Chemists and Druggists in 1861, and died in 1889. In 1865 Mr. J. Harrison Dakin (son of Mr. Joseph Dakin) joined the firm. The business was converted into a limited company in 1907 with a capital of 50,000/. Dakin Brothers of China, Ltd., was formed in 1889, with premises in Hong-Kong.

EVANS SONS LESCHER & WEBB, LTD.,

Bartholomew Close, E.C., and Hanover Street, Liverpool; also New York, U.S.A.

Evans, Lescher & Webb, wholesale and export druggists, 60 Bartholomew Close, E.C.

Founded by John Evans (born 1786), who in 1818 became a partner of Kempson & Yates, King Street, Snow Hill, E.C., a firm which as Kempson & Hernon had been established in Snow Hill in the middle of the eighteenth century. The firm became Kempson, Yates, Evans & Parkinson. John Evans left this firm in 1823, and went into partnership with Daniel Stable, 62 Wood Street, as Stable & Evans. Stable was the son of John Stable, who established his business at 27 High Holborn about 1790. Daniel Stable retired in 1827, and the firm became John Evans & Co. That year Joseph Sydney Lescher joined the firm, and it became Evans & Lescher, the premises being then at 4 Cripplegate Buildings. In 1833 a branch was opened at Fenwick Street, Liverpool, afterwards moved to Lord Street, and then to the present palatial premises in Hanover Street. To follow the London business for the present, the firm became Evans, Lescher & Evans in 1845, and the business was removed to Bartholomew Close. In 1863 John Evans retired (he

died 1865), and in 1866 F. Harwood Lescher (born 1842), son of Joseph Sydney Lescher, became a partner, and continued subsequently as a director until his retirement in 1907. In 1862 the firm became Evans, Lescher & Webb, when Mr. E. Alfred Webb and Mr. H. Sugden Evans became partners. H. Sugden Evans (born 1830, died 1886) was a younger son of John Evans, and became President of the Pharmaceutical Society in 1869. He afterwards went to Montreal to manage Evans & Sons, an offshoot (established in 1866 as Evans, Mercer & Co.) of the Liverpool firm. In 1870 John Hilditch Evans retired. In the meantime the Liverpool business had developed enormously. Joseph Sydney Lescher retired from it in 1835, John Evans admitted his eldest son, Thomas Bickerton Evans (died 1866), as partner, and in 1840 two other sons, Edward Evans (born 1816, died 1905) and John Hilditch Evans. Subsequently the sons of Edward Evans, sen.—John James, Sir Edward, and W. Paterson—became partners. Another son, A. Bickerton Evans, went to Canada to manage the branch business in Montreal, which has now been merged in the National Drug and Chemical Co. of Canada. In 1902 was formed Evans Sons Lescher & Webb, Ltd., with a capital of 400,000*l.*, the directors at the present time being John James Evans (Chairman), Sir Edward Evans, Edward Alfred Webb, William Paterson Evans, Alfred Bickerton Evans, and Jas. Herbert Everett Evans (senior directors), Thomas Edward Lescher, Harold Edward Webb, John Nevett Evans, Kenneth Wollaston Everett Evans, and Stephen Foster Webb (junior directors). Sir Edward Evans was President of the British Pharmaceutical Conference in 1912.

GALE & CO., LTD.,
15 Bouverie Street, E.C.

*John Gale, Parrah & Co., wholesale chemists,
15 Bouverie Street, E.C.*

Founded about 1818 as Gale, Baker & Warde at 41 Salisbury Square, E.C., in 1820, it became Gale, Baker, Warde & Hunt, but reverted to the style of Gale, Baker & Warde in 1827, the street being then Primrose Hill, Salisbury Square. Bouverie Street became the address in the following year. In 1846 the firm was Gale, Baker, Warde & Oldfield, and this style continued till 1859, when Warde was dropped out of the firm-name. It was during this time that the late John Brunt Mackey was a partner. He left in 1870 to start the business of Mackey, Mackey & Co., which is now absorbed into Willows, Francis, Butler & Thompson, Ltd. Mr. H. R. Arnold, of Burgoyne, Burbidges & Co., was in Gale's laboratory for five years. Gale & Co. became then the style of the firm, and continued until 1910, when the business was converted into a limited company, with a capital of 10,000*l.* The directors are Messrs. T. Jefferson, P. A. P. Gale, and D. A. A. Gale.

C. R. HARKER, STAGG & MORGAN, LTD.,
Emmott Street, Mile End, E.

*William Langton & Co., 15 Laurence Pountney Lane,
E.C.*

Founded in 1820, the firm became in 1840 Langtons & Wheatley, and in 1850 the style given above, Geo. Harker, previously in business on his own account, joining the firm. Later it became Langton, Harker & Stagg, and in 1883 Mr. Rowland Stagg, the surviving partner was joined by John Moss, who was for a time Treasurer and a Vice-President of the British Pharmaceutical Conference, the firm becoming Harker, Stagg & Moss. In 1887, when John Moss left, Mr. Stagg took into partnership Mr. Sidney Morgan, and the firm became C. R. Harker, Stagg & Morgan. Soon afterwards the whole premises were destroyed by fire, and business was carried on in temporary premises pending the rebuilding. The business was converted into a limited company in 1902 with a capital of 50,000*l.*, Mr. F. C. J. Bird and Mr. Thomas White being associated as directors. Mr. Bird is well known on account of his frequent contributions to the British Pharmaceutical Conference. At the close of 1905 the business was removed to Mile End, the

splendid range of buildings being described and illustrated in the *C. & D.*, May 19, 1906.

C. J. HEWLETT & SON, LTD.,
Charlotte Street and Curtain Road, E.C.

*Chas. J. Hewlett & Co., wholesale and export
druggists, Creechurch Lane, E.C.*

The business was founded in 1832 as Hewlett & Goddard at 68 Hatton Garden, where it remained for about a dozen years, when it was removed to Arthur Street West, London Bridge. In 1863 the Creechurch Lane premises were taken, the style of the firm being then Hewlett & Taylor. Mr. Taylor retired in 1870, and his place was taken by Mr. John C. Hewlett, F.C.S., when the firm became C. J. Hewlett & Son. Finally, the firm removed to Charlotte Street in 1883, the premises having been enlarged since then from time to time. Mr. C. J. Hewlett, the founder, died in 1901. The business was formed into a limited company in 1908 with a capital of 70,000*l.*, Mr. John C. Hewlett being chairman and Mr. E. J. Millard, Ph.C., F.C.S., and Mr. Vivian C. Hewlett, Ph.C., directors.

THOS. HODGKINSON, PRESTONS & KING,
262 Bishopsgate, E.C.

*Hodgkinson, Luckombe & King, drug-merchants,
86 Snow Hill, E.C.*

*Preston & Sons, wholesale druggists, 94 St. John
Street, Smithfield, E.C.*

The two houses were united in 1874. Hodgkinson's was established in the eighteenth century. In 1788 it was Wilson & Hodgkinson, 87 Snow Hill. A few years afterwards (1795) it was Wilson, Hodgkinsons & Minshall; in 1817 Ashmore was one of the component names, but in 1832 it was simply Thos. Hodgkinson & Co., the next change being to the style given above. The location was always Snow Hill, except for a short time before the amalgamation, when it was at Tenter Street, Moorfields. The only partner of the business of Hodgkinson, Luckombe & King at the time of the amalgamation was Mr. Charles King, whose son, Mr. H. E. King, is one of the present firm. Preston's, on the other hand, were in St. John Street, Smithfield Bars, before a move was made, owing to the construction of Smithfield Market, to Leadenhall Street, and it was a fire in 1878 that compelled the newly formed firm to move to Bishopsgate Street. In 1808 Preston's business was Wilson & Preston, there being a Wilson in the name for many years. In 1845 it was H. Preston & Sons. Mr. Alfred Preston, who died in 1905, and Mr. J. T. Preston, who died in 1904, were partners in the firm at the time of the amalgamation. Mr. J. Classon Preston, Ph.C., another partner, and the son of J. T. Preston, died in 1911. Lieut.-Colonel A. C. Preston, son of the late Mr. Alfred Preston, is now senior partner.

HOPKIN & WILLIAMS, LTD.,
18 Cross Street, Hatton Garden, E.C., and
Ilford, Essex.

*Hopkin & Williams, operative chemists, 5 New Cavendish
Street, W., and Wandsworth, Surrey.*

Founded at 10 New Cavendish Street in 1850 by John Williams and William King Hopkin, who had been fellow-assistants at Morson's in Southampton Row. John Williams was President of the Pharmaceutical Society from 1876 to 1879 and was President of the British Pharmaceutical Conference in 1884. The firm obtained a medal for fine chemicals at the Exhibition of 1851. In 1870 premises were acquired at Cross Street, Hatton Garden, which had been used as a Swedenborgian church (Edward Irving preached there and drew fashionable London), and were converted into a chemical factory. In 1873 the Cavendish Street pharmacy was purchased by William Martindale, President of the Pharmaceutical Society in 1899, and President of the Conference in 1891 and 1896. Hopkin & Williams later acquired a laboratory in Wandsworth, and in 1888 the business was sold to Howards & Sons, Stratford. John Williams died in 1889 and W. K. Hopkin in 1906. The business was converted into a limited company in 1903, with a capital of 25,000*l.*,

of which a director is Mr. Edmund White, President of the Pharmaceutical Society and formerly Secretary of the British Pharmaceutical Conference. The other directors are David, A. G., D. L., B., and G. E. Howard.

WHINFIELD HORA & Co.,

47 Minorities and 1 Swan Street, E.

Whinfield Hora & Co., wholesale druggists and plaster manufacturers, 58 Minorities, E.

Founded about 1837 by Robert Macord at 58 Minorities, in 1854 Mr. H. Whinfield Hora joined the firm, which then became Macord & Hora, but in 1856 simply Henry Whinfield Hora. The next year the present style was adopted.

HORNER & SONS,

24 George Street, Tower Hill, E.C.

Horner & Sons, drug-merchants, 20 Bucklersbury, E.C.

Believed to have been established in the sixteenth century. Bucklersbury was the headquarters of the London drug-trade from Tudor times. Stow (1598) says of this thoroughfare that "this whole street on both sides throughout is possessed of grocers and apothecaries." Shakespeare in "The Merry Wives of Windsor" makes Falstaff refer to a "smell like Bucklersbury in sample time"; Ben Jonson calls it "Apothecarie Street"; and it is stated that during the Plague of London (1665) the smell of drugs preserved the inhabitants of the street from that terrible disease. Horner & Sons was the last wholesale drug-firm to leave Bucklersbury, which they did about 1890 for Mitre Square. At the end of the seventeenth century the firm was Fawkes, Horner & Fawkes, and in 1830 Horner & Fawkes. Edward and Jas. Thos. Horner were founders of the Pharmaceutical Society. In 1908 the business was moved to the present address.

HOWARDS & SONS, LTD.,

Stratford and Ilford.

Howards & Sons, manufacturing chemists, High Street, Stratford, E.

Founded in 1809 by Luke Howard (who had been in partnership with William Allen from 1797), and in that year took over a chemical laboratory which had been started at Plaistow. Luke Howard moved the laboratory to the City Mills, Stratford, where it is still situated, but only till the new laboratories at Ilford are completed. In 1813 the firm was Howard, Jewell & Gibson—Jewell started as a porter at the Plough Court pharmacy, in 1791, but his ability ultimately won for him a partnership. In 1832 the style of the firm was Howard, Gibson & Co. Luke Howard, F.R.S., who died in 1864, had for many years previously retired from the business. His sons Robert and John Eliot Howard had been trained in the business. John Eliot Howard was connected with the business until his death in 1883. He was the great expert on cinchona and its alkaloids (which the firm began to make in 1827), and was elected F.R.S. in 1876. The sons of Robert Howard, Colonel Samuel Lloyd, David, and Theodore, joined the business. Colonel Howard retired in 1897 and died in 1901. Mr. David Howard's sons—D. Lloyd Howard and B. F. Howard—are connected with the business. The other partners were Mr. A. G. Howard, grandson of John Eliot Howard, and Mr. G. E. Howard, grandson of Robert Howard. The business was converted into a limited company in 1903, with a capital of 150,000*l.*, the partners becoming directors, with Mr. David Howard as chairman. Mr. D. Lloyd Howard is Treasurer of the British Pharmaceutical Conference.

H. O. HUSKISSON & Co.,

Moon Street, Theberton Street, Islington, N.

Wm. Huskisson & Sons, manufacturing chemists, 77 and 78 Swinton Street, Gray's Inn Road, W.C.

The foundation of this business can be traced back to the latter half of the seventeenth century, when Dr. Samuel Towers built in Oxford Road (now Oxford Street) the first laboratory for the manufacture of chemicals, it having been previously the practice of wholesale druggists to prepare chemicals on the roof of the house. Dr. Towers

was a physician, and was afterwards joined by his brother George. In the eighteenth century the business was moved to Little Warner Street, Coldbath Fields, and another part of the factory, where ammonia was made, was in Maiden Lane, Battle Bridge, where King's Cross Station now stands. The business at that time was owned by George Towers, who in 1807 took his nephews, Samuel and Thomas Huskisson, into partnership, the firm being Towers & Huskissons. In 1811 Samuel Huskisson separated from his partners and started a laboratory at 12 Swinton Street, taking his son John (born 1789) into partnership, as Samuel Huskisson & Son. Another son, William (born 1793), a founder of the Pharmaceutical Society, afterwards became a partner. John retired in 1861 and died in 1877, leaving his brother William, who died in 1872, and his nephews in the business. One of the nephews, Mr. Henry Owen Huskisson, Ph.C., is still principal partner, the other nephew, John, having retired some years before his death. A beautiful old relic of the business, an apothecary's cabinet, dated 1730, was figured in the *C. & D.*, March 21, 1891. The business was very fully described in the *C. & D.*, October 15, 1863. Street improvements in 1910 necessitated the removal of the business to the present address.

THOMAS KEATING,

50 Union Street, S.E.

Thomas Keating, chemist and druggist, 79 St. Paul's Churchyard, E.C., and wholesale druggist, 17 London-house Yard, E.C.

The retail business of Richard Battley at 79 St. Paul's Churchyard (see Battley & Watts) was taken over by Thomas Keating in about 1812, carried on with various partners, and eventually in his own name. He was a founder of the Pharmaceutical Society. Keating's cough-lozenges were introduced about 1820. Keating's powder came later, and as "Persian Insect-destroying Powder" was awarded a medal at the International Exhibition, 1862. Thomas Keating died in 1870, and in 1888 the shop in St. Paul's Churchyard was disposed of, the business becoming then exclusively wholesale. Mr. John Wylde acquired the business in 1870, and in 1908 was joined by his son, Mr. Cecil Richard Wylde, in partnership.

LANGTON, FORT & Co.,

Wholesale Druggists, 10 Beer Lane, E.C.

Langtons, Scott & Edden, 226 Upper Thames Street, E.C.

Established in the eighteenth century. In 1827 the firm was James Metcalf & Co., 5 Old Fish Street, Doctors' Commons. By 1843 it had become W. Metcalf at 154 Upper Thames Street; this was altered the next year to Metcalf & Edden, then (in 1846) to Edwin Edden & Co. Next an amalgamation took place with Langton Brothers & Scott at 225 and 226 Upper Thames Street, the style (in 1854) being then Langton Brothers, Scott & Edden; and the title was next changed to Langton, Scott & Edden, remaining at that until 1890, when it was Langton, Edden, Hicks & Clark, at 38 Wilson Street, Finsbury. When John Clark retired at this time the partners were W. Langton, Frank Hicks, and Alan Hicks. In 1894 Alan Hicks joined Davy, Yates & Hicks (see The British Drug Houses, Ltd.). The firm of Langton, Edden & Co. was dissolved in 1897, and W. M. Langton founded Langton, Fort & Co. at 20 St. Dunstan's Hill, which has since been removed to the present address.

MAY & BAKER, LTD.,

Battersea, S.W.

May & Baker, chemists, Garden Wharf, Battersea, S.W.

Founded in 1834 by Mr. John May (who came from Ipswich) in partnership with Messrs. Pickett and Grimwade, who had been fellow-assistants at Ipswich. The business was founded on the same site it now occupies, the freehold of which was acquired in 1876. Pickett died soon after the firm was started, and Grimwade retired in 1839 to go into farming. Mr. William Garrad Baker

was taken into partnership in 1839, the firm becoming May & Baker. In 1876 Mr. John May retired, when Mr. R. C. Heath and Mr. Thomas Tyrer were admitted partners, and two years later Mr. W. E. B. Blenkinsop, Mr. Heath's stepson. Mr. Tyrer retired from the firm in 1890, and the business was converted into a limited company, with a capital of 60,000*l.*, with Mr. W. E. B. Blenkinsop as managing director. John May, who also joined the new board of directors in 1891, died in 1893. Mr. W. G. Baker, who was also a director, died in 1902, having been living in retirement from 1897. The present chairman of the directors is Mr. R. C. Heath, who joined in 1891. Mr. W. R. B. Blenkinsop and Mr. Phillip Blenkinsop, sons of Mr. W. E. B. Blenkinsop, are associated with him in the management; and the secretary is Mr. W. G. Hyde.

MEGGESON & CO., LTD.,
14 and 15 Miles Lane, E.C.

Meggesson & Co., druggists, lozenge and jujube manufacturers, 61 Cannon Street, E.C.

The business was founded by George Meggeson, Ph.C., at 61 Cannon Street. He was a Yorkshireman, and came to London to manage the business of Widow Staveley & Co., drug-merchants, 39 Fenchurch Street, and, when that business was relinquished in 1814, he started with a partner as Cooke & Meggeson, chemists and druggists. He joined the Pharmaceutical Society in 1842. In 1848, on the death of the senior partner, John Hugill and Alfred Attwood were taken into partnership. John Hugill was born at Whitby, in 1812; he was apprenticed at Scarborough and served as an assistant in London for some years before joining the firm. Mr. Meggeson died in 1874, aged ninety, but had retired from business before then. The lease of 61 Cannon Street expired in 1876, when the retail business was dropped and the wholesale trade transferred to Miles Lane. Alfred Attwood died in 1886 and John Hugill in 1900 (aged eighty-seven). The business was in 1900 converted into a limited company, with a capital of 70,000*l.*, the directors being Mr. John Howden Hugill, Ph.C., Mr. Edwin Abbott Hugill, chemist and druggist, and Mr. Arthur Major Hugill, Ph.C., sons of Mr. John Hugill, the last-named son being also one of the proprietors of R. Sumner & Co., Liverpool. Mr. H. Vincent Dodd has recently joined the directorate, and is taking an active part in the business of Meggeson & Co., Ltd.

T. MORSON & SON,
14 Elm Street, Gray's Inn Road, W.C., and Summerfield Works, Ponder's End, N.

Thomas Morson & Son, operative chemists, 19 and 46 Southampton Row, Russell Square, W.C.

Founded by Thomas Newborn Robert Morson, who in 1821 succeeded to the apothecary's shop in Old Fleet Market, now Farringdon Street. He had been apprenticed in 1815 in the same shop to the proprietor, Charles Dunn, a retired Army surgeon, who died a year afterwards, and was succeeded by Henry Morley, an apothecary, so that the business of Morson dates back into the eighteenth century. In 1818 he went to France, returning in 1821. The first quinine sulphate and morphine made in England were prepared at the old pharmacy in Fleet Market. In 1826 Mr. Morson moved to 19 (afterwards renumbered 124) Southampton Row, and shortly afterwards erected works at Hornsey Road, N., for the manufacture of creosote, then just discovered. The retail and wholesale branches were separated, and an alkaloid factory was opened at Homerton. Mr. Morson was twice President of the Pharmaceutical Society—1848-9 and 1859-61—and died in 1874, aged seventy-three. His son Thomas Morson (born 1825) had joined him in partnership some years before. Like his father, he had received part of his education in France. The retail pharmacy was closed in 1900, and the offices and warehouses moved to 14 Elm Street in 1904. Mr. T. Morson died in 1908, his sons, Mr. T. P. Morson and Mr. A. R. Morson, and two sons of Mr. T. P. Morson (Mr. T. D. Morson and Mr. Leslie Morson) being the present partners.

POTTER & CLARKE, LTD.,

Wholesale Druggists, 60-64 Artillery Lane, 54 Farringdon Street, E.C., and Manchester.

Henry Potter, leech importer and herbalist, 66 Farringdon Market, and 65 Farringdon Street, E.C.

Founded 1812 by Henry Potter in Fleet Market, now Farringdon Street. In 1846 he sold the business to his nephew, Henry Potter, and George Hailey, an old apprentice, who carried it on as Potter & Hailey at 66 Farringdon Market, whence Fleet Market had been removed. Mr. Hailey retired in 1854, leaving Henry Potter sole proprietor. His son, also Henry Potter, became a partner in 1870, the firm-name being changed to Potter & Son. In 1875 Charles Goddard Clarke, son-in-law of the senior partner, joined the firm, which became Potter, Son & Clarke. When Henry Potter, sen., died in 1880 the style was changed to Potter & Clarke. Mr. C. G. Clarke was elected M.P. for Peckham in 1906, and died in 1908. The premises at Farringdon Market becoming inadequate for the business, warehouses were taken successively at Duke Street, Spitalfields, Weston Street, Bermondsey, and Artillery Lane. The last-named premises are on the site of the house and garden of Nicholas Culpeper, the celebrated herbalist. Mr. H. Arthur Potter, Ph.C., and Mr. Richard C. Wren became partners in 1896, and in 1907 the firm was converted into a limited company, with a capital of 50,000*l.*, the partners becoming directors. The premises of the company were described in the *C. & D.*, January 27, 1912.

THOMAS TYRER & CO., LTD.,

Stirling Chemical Works, Abbey Lane, Stratford, E.

Dunn, Heathfield & Co., manufacturing chemists, Prince's Square, Finsbury, E.C., and Stratford, E.

The business was founded in 1844 and was known as Dunn & Co., and subsequently as Dunn, Heathfield & Co. In 1870 Dr. W. S. Squire, eldest son of Peter Squire, who had been a partner in the firm of Burgoyne, Burbidges & Squire, joined the firm, which then became Dunn, Squire & Co. Dr. Squire in 1875 established the business of Squire, Chapman & Messel at Silvertown to work the catalytic process for the manufacture of sulphuric acid. Dunn's business was purchased in 1891 by Mr. Thomas Tyrer, F.I.C., F.C.S., who had retired from the firm of May & Baker. Mr. Tyrer was President of the British Pharmaceutical Conference in 1907. The business was converted into a limited company in 1898, with a capital of 35,000*l.*, Mr. Tyrer being managing director.

WARRICK BROTHERS, LTD.,

6 Nile Street, City Road, N.

Warrick Brothers, merchants and wholesale perfumers, 3 Garlick Hill, Upper Thames Street, E.C.

John Carter Lucas, wholesale druggist and lozenge manufacturer, 113 Aldersgate Street, E.C.

Founded in 1827 by John Warrick at 14 Hatfield Street, Blackfriars, who is described as an importer of foreign drugs and chemicals. He was agent for Pelletier, Roliquet & Boyveau, and M. Levaillet, of Paris, and sold the first ounce of quinine in England, the purchaser being Mr. T. N. R. Morson. The premises were afterwards moved to Three King Court, Lombard Street, next to Laurence Pountney Lane; then to Garlick Hill and Old Swan Lane; in 1896 to Portpool Lane, Gray's Inn Road; and finally, in 1903, to Nile Street. The lozenge business of Lucas Brothers, as it had then become, was purchased in 1877—it had been established in 1829. The style of the firm in 1845 was J. Warrick & Son, and it became Warrick Brothers when Mr. Frank Warrick and his youngest brother, Mr. Robert B. Warrick, took it over on the death of John Warrick. Another son, Tom Warrick, started a perfume factory at Nice with a M. Bonteau, as Bonteau & Warrick. M. Bonteau soon retired, and, Mr. Warrick dying young, Frank Warrick went to manage the business which is now known as Warrick Frères. Then Mr. Robert B. Warrick became sole manager of the London house. He retired from business in 1886 (he died in 1908) in favour of his son

Mr. Frederic Walmsley Warrick, Ph.C., and his nephew Mr. Arthur Warrick, who had been especially trained in branches of the business. The business, with the exception of the Jelloid Co., was in 1906 converted into a limited company with a capital of 20,000l.

WHIFFEN & SONS, LTD.,
Battersea, S.W.

Atkinson & Biggar, manufacturing chemists and drugginders, 66 Aldersgate Street, E.C.

Jacob Hulle, Chemical-works, Lombard Street, Battersea, S.W.

The first-named business was established in 1654, and at the end of the eighteenth century was carried on by J. Maud, "chemist and refiner," at 66 Aldersgate Street. It afterwards became Maud & Biggar; Biggar, Atkinson & Dell; Biggar, Atkinson & Cheppindale; and G. Atkinson & Co. It was acquired by the late Thomas Whiffen in 1887. The business of Jacob Hulle was founded at Laurence Pountney Lane about 1807. In 1854 Edward Herring, of Aldersgate Street, and Thomas Whiffen started a factory for alkaloids and fine chemicals at Trinity Street, Borough, Edward Herring having the previous year obtained a patent for a method of preparing sulphate of quinine without employing alcohol. Jacob Hulle in 1858 acquired Herring's interest, but retired in 1868, leaving Thomas Whiffen as head of the firm. His second son, W. G. Whiffen, was in charge of the works, and in 1873 T. J. Whiffen, the elder son, joined the business. Thomas Whiffen died in 1904. The business of J. A. Wink & Co., founded in 1890 by J. A. Wink, Ph.C., who died in 1905, was afterwards absorbed. The limited company was formed in 1912, with T. J. and W. G. Whiffen as directors.

ALFRED WHITE & SONS,

Wholesale and Export Manufacturing Chemists,
28-31 Allen Street, Goswell Road, E.C., and Yiewsley
Chemical Works, West Drayton.

Thomas Reynolds and Alfred White, aquafortis manufacturers and chemists, Castle Street, Saffron Hill, E.C.

Founded 1775 by Thomas Bratton at Castle Street, Saffron Hill. At the beginning of the nineteenth century the style of the firm had become Bratton & Whites, and in 1831 it was T. E. White. In 1852, when Farringdon Road was constructed, a portion of the firm's premises was pulled down, and the manufacturing branch transferred to West Drayton. The Castle Hill premises were vacated in 1901, when the present offices and warehouse in Allen Street were entered upon. The Alfred White mentioned in the title, and who died in 1895, had joined the firm in 1828. His son, Mr. P. T. White, carries on the business.

WILLOWS, FRANCIS, BUTLER & THOMPSON, LTD.,
40 Aldersgate Street, E.C.

Burgess, Willows & Co., wholesale druggists, 101 High Holborn, W.C.

Samuel Foulger & Son, wholesale and export druggists, 133 St. George's Street, E.

Herrings & Co., wholesale druggists, 40 Aldersgate Street, E.C.

Henry Ayscough Thompson, manufacturing chemist, 86 Chiswell Street, E.C.

The date of the foundation of the first-named firm is 1751 at 101 High Holborn, W.C. John Cole was proprietor in 1815, and he was succeeded by his nephew, W. H. Cole. In 1854 it was purchased by Robert Burgess, of the firm of Yates & Burgess, and when he died in 1855 John Willows, who had been associated with Robert Burgess, became proprietor. He was joined by his brother, Mr. Jesse Willows. John Willows died in 1875, and Mr. T. P. Francis became a partner, the firm being then Willows & Francis. In 1883 the business of Samuel Foulger & Son was absorbed, the surviving principal, Mr. Charles Butler, becoming associated, the firm name being changed to Willows, Francis & Butler. Foulger's business was established about 1802 at Old Gravel Lane, Wapping, from which in 1814 it was moved to Ratcliff

Highway, and afterwards to the address given above. The premises at 101 High Holborn were burnt down in 1898, and a month afterwards the business of Herrings & Co. was acquired and carried on at 40 Aldersgate Street. Herrings' business was established in 1808 at 8 Barbican by Thomas Herring, who was apprenticed at Norwich, and had been with Kirk, Hearon & Co., predecessors of Hearon, Squire & Francis, now absorbed by The British Drug Houses. He took his brother, Thrower Buckle Herring, into partnership, under the style of T. & T. Herring. In 1815 the firm moved to 40 Aldersgate Street, and took Mr. Burbidge into partnership, under the style of Herrings & Burbidge. In 1828 it became Herrings Brothers, and finally the form given at the head of this note. Thomas Herring was President of the Pharmaceutical Society in 1851 and died in 1864. The business of Henry Ayscough Thompson was absorbed in 1892 owing to Mr. Thompson's health failing. This business had been founded in 1847. Mr. Thompson died in 1894, and his son, Mr. H. Ayscough Thompson, who had been associated with his father for some years, became a partner in Willows' business. Mackey, Mackey & Co., Ltd., was taken over in 1901. It had been founded by J. B. Mackey in 1870 at Bouverie Street, afterwards moved to Grange Road, S.E. Mr. Mackey died in 1898. The business of Willows, Francis, Butler & Thompson was in 1904 converted into a limited company, with a capital of 50,000l. The directors are Messrs. C. Butler, T. Harper Francis, and H. Ayscough Thompson.

WRIGHT, LAYMAN & UMNEY, LTD.,
44-50 Southwark Street, S.E.

Wright, Francis & Co., 11 Old Fish Street, E.C.

Particulars of the foundation of this company are given in an article beginning on p. 135.

Advertising and Badvertising.

By Christopher Courtenay.

"Being America's Foremost Ad-writer, he knows the real dif-
twist Advertising and Badvertising. Charges a bit high, but
Bargain Brains are Speculation and his Wealth-winning Web-
sterian an INVESTMENT! Write him fully, enclosing your pre-
sent ad-literature, if you're really after the Scarce, Swift, Strong,
Sure, Six-Cylinder SALESMANSHIP!"

THUS Ad-Man Davison, of Kansas City, U.S.A., in the advertising columns of a Transatlantic contemporary.

I am not in a position to dispute Mr. Davison's claim to the premiership in America's advertising polity. Doubtless there are others in that virile land who are equally positive as to *their* title to pre-eminence; but I think we are distinctly obliged to Mr. Davison for a new compound adjectival substantive.

So far as I know, the telescopic word "badvertising" is original to this particular Ad-Man, and no one will deny that it is ingenious, arresting, and expressive. Moreover, the difference between advertising and badvertising is the difference between success and failure, and the faculty of being able to judge as to which is which and be right even in seven cases out of ten, is one not easily acquired.

As a matter of fact, it is usually learnt—as most business knowledge is—by experience. In the course of acquiring this experience the experimenter often suffers severely, and the weak one gives up. The dogged one sets his teeth hard, tries another tack, refuses to look back on the failures (except as lessons well deserved), and ultimately makes a fortune.

It is all nonsense to lay down a rigid rule or set of rules, to fit all advertising. Publicity is one of those elusive sciences that cannot well be standardised. Each particular problem must be dealt with in the way that fits it best, and no "advertising expert" on earth can make a success of everything he takes in hand. The "expert" invariably has a style and system of his own that is a panacea for all business troubles, and very often his system does not fit, particularly if anything connected with pharmacy or the drug-trade is being dealt with.

The only real success in drug-trade advertising is achieved by those who are in the drug-trade themselves.

Four important factors have to be borne in mind, however, with regard to all advertising. I have mentioned them before, but their merits as success-bringers cannot be over-emphasised. They are:

- (1) Neatness and taste in the display.
- (2) Attractive type (preferably thin-faced and all of one series).
- (3) Reticence in verbiage.
- (4) Persistence.

A little careful study of those advertisements in weekly issues of *THE CHEMIST AND DRUGGIST* that specially attract will soon bring home to a chemist the truth of these precepts.

Have you ever thought of the influence that *THE CHEMIST AND DRUGGIST* has had on advertising? Most of the schemes that have originated in *THE CHEMIST AND DRUGGIST* have been adopted generally not only by trade journals, but by lay magazines and daily papers. I find the latest "new idea" with magazines like the "Strand" and "Pearson's" is an advertisement competition. Competitors are asked to select the four advertisements, full page, half page, quarter page, and eighth, in certain issues (or a particular issue) that they consider the best, and to state the reasons for their conclusions. In the case of "Pearson's" the reader who selects the best advertisements in three issues and places them in the order of merit which most nearly coincides with the aggregate votes received from readers, gets the prize.

Now, how many years has this kind of competition been in vogue in connection with *The Chemist and Druggist Diary*? Over twenty years, to my own knowledge. Yet the professional publicity-mongers hail the "Strand" idea as novel!

There are several other interesting things in connection with these monthly magazine competitions. Singularly enough, the winner of the first prize (100*l.*) in connection with a recent "Strand" advertisement competition is a man who has probably studied the advertisements in *THE CHEMIST AND DRUGGIST* for a good many years. The prize was won by Mr. A. M. Poxon, who for nearly twenty years has been correspondence clerk to Messrs. Newball & Mason, of Nottingham. In the course of an interview with a representative of "The Advertising World," Mr. Poxon said he had nothing to do with the advertising work of his firm, but, as a business man, he always reads advertisements. In selecting

"Bronnley's Corner."

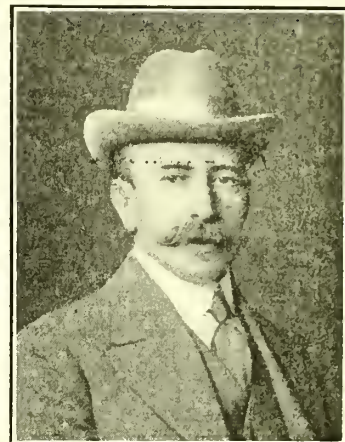
Some particulars about the business in which "Private Brands" of soaps originated, and how Messrs. H. Bronnley & Co., Ltd., have made their name and goods familiar to the public as well as to the trade.

THE way that London grows astonishes even Londoners. Less than ten years ago Acton Vale, in the west, was an almost inaccessible region which the holiday-maker might venture into and passengers to Uxbridge passed through, but anything in the nature of business or manufacturing was the last item to associate with its spreading green fields and generous trees. Now the "tube" to Shepherd's Bush, and thence a penny tramcar ride further west by Uxbridge Road takes one to the Vale. It was thither that Mr. James Heilbronn, of H. Bronnley & Co., Ltd., went about eight years ago and purchased a goodly piece of land on the west corner of Warple Way and Uxbridge Road, where by and by he erected a series of buildings including a factory for H. Bronnley & Co., which they occupied early in 1906. This soon came to be known as Bronnley's Corner, and since then Du Cros, Ltd., have erected big motor-works just opposite, while further up the street on the same side as Bronnley's there are electrical works—in brief, Warple Way teems with industrial life.

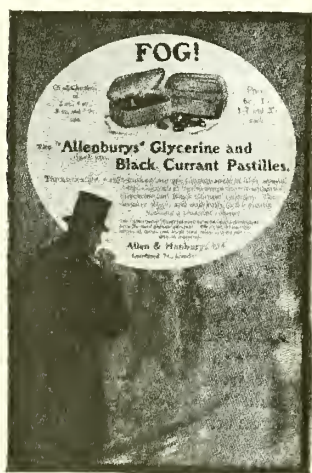
Seven years ago Messrs. Bronnley had the greatest difficulty in regard to carriers; none had called at Acton Vale in the way of business up to then, and it needed special inducements to get any to call at all; but it did not take very long before a regular service was established to Bronnley's Corner, and now the attention by more than half-a-dozen carrying firms is ample to the point of embarrassment. This is mentioned merely to show how quickly a deserted part of the Metropolis can become a business centre.

It is a little over a quarter of a century since Mr. James Heilbronn commenced business as a soap-maker and manufacturer of toilet specialties in Danbury Street, London, N. By 1897, or within a decade, we were able to say, in reporting on his firm's "Private Brands" of toilet soaps and specialties, that "the best-known firms in the country seem to employ Messrs. Bronnley in this way [i.e., producing such specialties], and their trust is well placed, for anything more elegant than their manufactures we have rarely seen." It was further remarked that they kept their own name out of the products, a condition which still obtains, the "Private Brands" being a prominent feature of the business; but to it they have during the past ten years added lines of soaps, perfumes, and toilet articles to which the name of Bronnley is invariably attached, and which have become public favourites.

The firm had been about ten years in business when they formed themselves into a private limited company (February 1896), and shortly after that they extended their productive capacity by acquiring the soap factory of Messrs. Lucas & Co. Latterly Mr. Heilbronn has had valuable assistance on the commercial side of the business from his co-director, Mr. Steinheim, who, in its interests, has travelled in most parts of the British Empire or wherever business with Britain is done. To



MR. JAMES HEILBRONN.



what he considered the best advertisement he simply used common sense and indicated those that appealed to him as a member of the ordinary public. His judgment was not affected in any way by special advertising experience. He confessed, however, to a special liking for oil-paintings, and pictures scenes artistically arranged specially attract him. That is probably the reason why the winning full page (reproduced herewith) should meet with Mr. Poxon's commendation, and no one will deny that it is artistic. It is still another singular coincidence that this winning page in the "Strand" should be that of a firm so well-known to pharmacists as Messrs. Allen & Hanburys, Ltd. But the coincidences multiply. For the first prize to advertisers (150*l.* worth of space) in "Pearson's," was also won by Allen & Hanburys, Ltd., for a double advertisement of the Allenburys Foods.

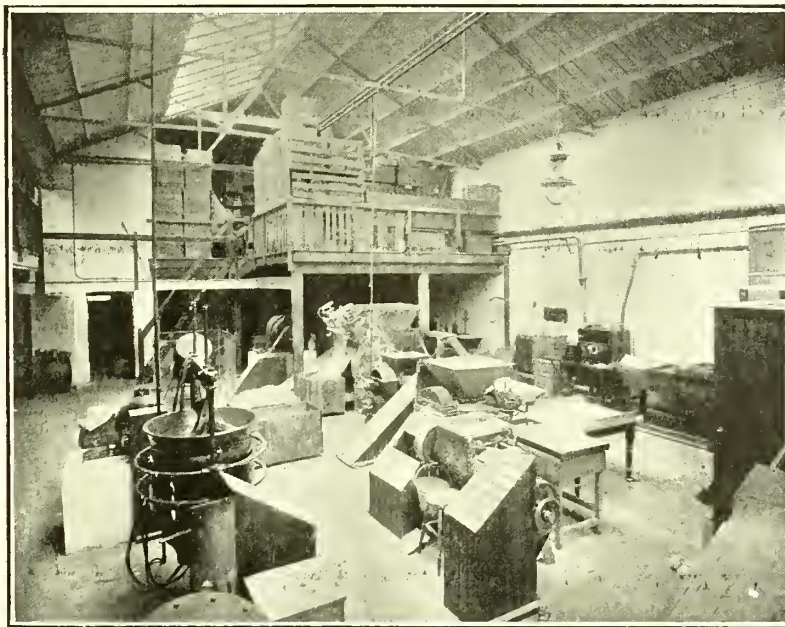
many places he went thinking that the name of Bronnley would be new, but he was often greeted with such a remark as, "Oh! I know your firm; they advertise in the *C. & D.*"

From the outset Messrs. Bronnley have made milled soaps only. That was far from being a familiar process in this country at that time; now the process of melting and moulding is old-fashioned and almost extinct. In the Warple Way factory one sees the milling process at its best. One of the photographs which we reproduce shows a milling-machine at work. It consists essentially of granite rollers from which the soap, after drying to a point and admixture with emollient ingredients and perfumes, emerges as shreds, to be returned over and over again. Then other machines take it up, making it into bars or long pipe-like pieces, which are cut into short lengths, each of which is enough for a cake; and when that has gone through the stamper it, if uncoloured, shines like ivory, the polished surface being a characteristic due to the compounding. Besides the superfatting which Dr. Unna made possible, Messrs. Bronnley have a process to which they give the name "Albunyl," by which certain ingredients are introduced into the soap-mass at a particular stage, the effect of which is to make the soap more emollient in use; that is to say, while ensuring full soaping power,

thinks that the hydrolysis is delayed, or maybe the detergent elements are by the Albunyl process retained in the colloidal state.

Other machinery and apparatus observable in the picture are for different mixing processes, including tooth-pastes, face-creams, and the like. A series of rooms fronting Warple Way are devoted to compounding perfumes and other work, while a portion of the ground-

floor is used as a final packing department. Up to two years ago the factory was a one-floored building, lighted well from the roof (where the windows are exposed to the north) as well as from the west. In front is a distinct building with laboratories and compounding-rooms on the ground-floor, on a level and communicating with the factory. The upper storey of the building contains the directors' rooms and offices. Two years ago an extension became necessary, and this was ingeniously contrived by the erection of a platform or gallery above the machinery part. Of this we give two views, which sufficiently indicate the nature of the work that goes on there. Our representative was struck by the spotless cleanliness that prevails, not only where delicately printed labels and wrappers are handled, but in every part of the factory. The power used throughout is electric, and every means is taken to exclude such dust or smoke as there may be in the neighbourhood.



A CORNER OF THE SOAP-WORKS.



SOAP-PACKING PLATFORM.



PACKING BRONNLEY'S PERFUMERY.

the hydrolysis, which is natural when soap and water are brought together, is so counteracted that the freed alkali does not affect the skin. What actually happens has not been determined scientifically, but Mr. Heilbronn

Another feature—indeed, a principle in the business—is that nothing but the best of ingredients is used in manufacturing, and the stocks of essential oils and other perfumes are amazing in quality and variety. Our

representative also saw receipts for many kilos. of otto of roses which are kept in strong-rooms at a bank, and which are drawn from as required.

The development of the Bronnley perfume business is a story in itself, which cannot be told in a single article; sufficient to say that "Courvoisier" is the coined and registered name adopted by Messrs. Bronnley, and it has become known all the world over as a mark of high-class products, not only as regards quality, but for elegance in get-up and artistic finish. We shall not attempt to describe the individuality which characterises each of their series—Viotto, Havanita, Omar Khayyam, C.C., Rose Royale, and Trefleurs perfumes, with their associated soaps and toilet articles. They have become known to the trade all over the world, and are kept before the public by artistic and effective advertising. The latest effort in that direction is an order for a million four-page folders about Courvoisier's perfumes, which are to be inserted in popular monthlies. It is an artistic and effective advertisement. This and other newspaper advertising is followed up by sampling, and even by typed letters to inquirers, which refer them to chemists in the neighbourhood who stock the goods. So well has the Courvoisier brand grown in esteem that some of the biggest retailers in the world now ask Messrs. Bronnley to attach it to special products which are designed and reserved for them. This is a significant development of the "Private Brands" business. Our representative had the opportunity of going through a series of cabinets in which specimens of products for many retailers, large and small, throughout the world are kept for reference. Messrs. Bronnley create styles for each, beginning with the character and composition of each article (sometimes a score or more in a series), up to the manner of labelling, wrapping, and boxing, every detail being thought out and special designing done. Some of the biggest department stores in London have complete series, including perfumes, produced *ab initio* by Messrs. Bronnley, and one series differs so much from another as to ensure no similarity. It was interesting to examine a series for a firm in Burmah in which a native lady's portrait was ingeniously worked into an Oriental design of label. Perhaps more interesting is the fact that only the highest-class perfume, bottles, and cases are wanted by such Eastern customers. A firm in China require Dr. Sun Yat Sen's portrait to be worked into the labels of a new series for that market. These must suffice as examples of what Messrs. Bronnley set themselves to do. They seem to say, "Tell us what you think you would like, and we shall materialise your wishes, whether it be soap, dentifrice, perfume, hair-wash, skin-lotion, face-powder—what you like." Tariff walls are no impediment to them. Our representative saw a consignment of the big sixpenny bath-tablets ready to go to Germany, and there was another of the same for New York, where each tablet sells at 25c.—because it is Bronnley's.



Copyright]

[Historical Medical Museum.

XV.-CENTURY HISPANO-MOESQUE PHARMACY POTS.

Francis Sutton.

The oldest member of the British Pharmaceutical Conference, and the only survivor of those who founded it at Newcastle-on-Tyne on September 2, 1868.

FEW circumstances in connection with this week's celebration of the Jubilee of the British Pharmaceutical Conference are of greater interest than the fact that one of the founders is still alive—viz., Mr. Francis Sutton, F.I.C., F.C.S., Ph.C., of Norwich, who from 1851 to 1854 was in business in Newcastle-on-Tyne. He remembers the inaugural meeting, and might have attended the Jubilee one, but his eighty-two years are more consistent with *dolce far niente*, in which his son, Mr. F. Napier Sutton, F.I.C., caught him at home recently, as reproduced in the subjoined portrait study:



FRANCIS SUTTON.

Mr. Sutton is the only son of Mr. Francis Sutton, V.S., Plumstead, Norfolk, and was born in February 1831. When thirteen years of age he was apprenticed to Mr. Harper, chemist and druggist, Norwich, with whom he remained until 1851, when he joined an old fellow-apprentice who had started in business as a chemist and druggist in Newcastle-on-Tyne. That was a momentous change for him, because it brought him in contact with Dr. Glover, who persuaded him to make a thorough study of chemical science, and the result was that he attended the chemistry classes at the local College of Science. There he met John Pattinson and Joseph Wilson Swan, with whom he formed a lifelong friendship. The chemistry lecturer at that time was a Dr. Chambers, who was a pupil of Liebig.

At the end of 1854 Mr. Sutton was recalled to Norwich to manage for Mrs. Harper the business in Bank Plain, where he had been trained, his apprentice-master having died. He had become more enamoured of analytical chemistry than he was of pharmacy, and continued experimental work in the back shop after business hours, giving special attention to fertilisers, as to which he had imbibed Liebig's spirit through Chambers. Soon the Norfolk farmers began to realise that this young man might help them, and he steadily built up a connection as an analyst, with the result that he took separate premises—a disused blacksmith's shop—which he fitted up as a chemical laboratory. The old forge remained for many years in its place, and was ultimately converted into a smelting-furnace. He became official gas-tester and referee for the City of Norwich, whose supply was obtained from the British Gas Light Co., and a testing-room with photometer was fitted up in the laboratory. Meanwhile, his partnership with Mrs. Harper continued until 1868, when he acquired the business. This was the year in which he was Hon. Local Secretary to the Conference on its visit to Norwich. In 1873 Mr. E. Nuthall joined him in partnership in the pharmacy, and Mr. Sutton left that business altogether in 1876. He had been a member of

the Pharmaceutical Council for some years from 1860. Besides his analytical and retail businesses Mr. Sutton was for about a quarter of a century a chemical-manufacturer, he having in 1869 entered into partnership with Mr. John Baly as Baly, Sutton & Co., and established chemical-manure and sulphuric-acid works at Great Yarmouth in 1870, which the firm carried on, also making ammonium sulphate and hydrochloric acid, until 1893, when the works were sold to Messrs. Prentice Bros.

In 1859 Mr. Sutton married Marian Harriett Lincoln, of Halesworth, Suffolk, and their happy married life was blessed with seven children (three sons and four daughters), six of whom survive. Mrs. Sutton died in 1911. His son Mr. W. Lincoln Sutton, F.I.C., has long been associated with him in the analytical practice, and they are jointly public analysts for the counties of Norfolk and Suffolk, the City of Norwich, and the Boroughs of Great Yarmouth, Ipswich, and Bury St. Edmunds. Another son, Mr. Francis Napier Sutton, F.I.C., is an inspector under the Alkali, &c., Works Act, and was for many years Hon. Secretary to the Chemical Industry Club. We do not know of any chemist now alive, other than Mr. Francis Sutton, who has had the rare privilege, as well as distinction, of reading reviews of his first book and, fifty years later, reviews of a tenth edition of it. We reprinted in our weekly "Retrospect" of April 12 the review which appeared in *THE CHEMIST AND DRUGGIST*, April 15, 1863, of the first edition of Mr. Sutton's "Volumetric Analysis," the tenth edition of which, edited by Mr. W. L. Sutton and Mr. A. E. Johnson, was published in 1911. It has undergone many changes during the period, and it still represents what it was fifty years ago—an exact record of volumetric methods fitted practically for the requirements of the time, and consistent with current chemical science. That such a work should have emanated from a pharmacy and a founder of the British Pharmaceutical Conference is a good remembrance for this Jubilee week. Pharmacists of a past generation were proud of it; the French required a translation of the book, which was done by Mehu, and Mr. Sutton's election as corresponding member of the Imperial Pharmaceutical Society of St. Petersburg and of the Austrian Apotheker Verein are two only of many honours conferred upon the author in recognition of the value of his work.

By Foreign Mail.

MANY queer letters come to business-houses in this country, and here is one of them which Messrs. F. Newbery & Sons, Ltd., recently received from a gentleman of colour and of the widespread Smith family in Gold Coast. Messrs. Newbery call it "a variant of somewhat similar products" occasionally received by them:

DEAR SIR,—I have pleasure in acknowledging to write you that your name has been highly recommended to me by a certain friend of mine he saying to me that you are one of the most famous Doctor in the City of London, E.C. Therefore I beg you most respectfully to say that by this time our Gold Coast here they use to deal with learning—medicines, Charm, brain pills, brain salt, electric belt for learning, and everythings in our school. Therefore I beg you kindly send me the prices of your learning medicines because I am always disgrace myself in school. I always learn my lessons but all in vain. I want you to know my memory very well that there is know nothing in my head I always disgrace myself in school trully arithmetic and everythings in school. I always learn but I can not catch it in my head at all I am very sorry of myself altogether dear Doctor please if you get one of your friend have a learning medicine then you let me know sir. Because I want to be as a first boy in school am too much disgrace in school sir. And also I am one of the gentleman son too in high school what I have done in school always is not right at all am very sorry of myself too much I don't know what I am doing at all dear Doctor.

Yours truly,
SMITH.

The young man's ambitions for scholarship are not to be satisfied on this occasion. When Mr. Edmund Grimshaw was recently in Lima, Peru, on behalf of several well-known English firms, he picked up in a chemist's shop a handbill respecting an "invigorating tonic," from which we venture to quote:

In the same are represented in a happy and unique combination, the principal active principles of restoring and invigorating action, lately discovered as the result of long-lasting studies which medical commissions, named for this purpose, have undertaken, in the plants of the African, Indian and Chinese flora.

Indeed, in patient labor the plants have been studied, which are reputed as tonics by the native dwellers of the soil of Africa, India and China and their strengthening elements have been isolated and afterwards combined in the marvellous preparation which has the name of Eubioplasma or Invigorating Tonic.

This remedy has upon the organic metamorphosis the surprising effect of restoring the debilitated action of this metamorphosis, strengthens the serum of blood, augments the red blood-globules and strengthens the action of the white blood-globules, which destroy the prejudicial substances.

From seventeen paragraphs of specific ailments for which it is said to be useful we quote only two of the mildest:

9th. In the pulmonary disacer and sicknesses of the bronchias the Invigorating Tonic produces the effect of restrengthening the tendency to congestions and to hemoptysis, produces a lighth hematosiis, combats the bronchitis and the bronchial catarrh.

10th. In sicknesses of the vessels this remedy is indicated for the resolving action which it has upon the gland of milt.

Directions for use: The ordinary dose is three tablespoonful in a day, taken with the alimments. For children three tea spoonful. One bevore the alimments.

"It is quite evident," writes Mr. Grimshaw, "that a small knowledge of English and a large dictionary have been used in the translation."

The subjoined message came to Messrs. Howards & Sons, Ltd., Stratford, last week:

crommeling straat combe. Lo I.B.W.
No. 176 Paramaribo swunam 6.24. 13
Sher Mohammad.

Send for me, a Many sample and any
callor sample. book and give me a
answer early, on very quick! And I want
see some velvet sample Ao!
send some sample. silk Handerschif!

The letter was not indifferently written, but even more

*Manufactured by Howards & sons
Limited stratford. Effex*



curious than it was the address on the envelope, a facsimile of which we also give.

Herbals.*

HERBALS are among the most delightful of old books. They owe their charm almost as much to the naïveté of their authors as to their subject, but the latter itself is full of interest, especially to anyone who is concerned with medicine or botany. Mrs. Arber, as she says in her preface, deals with them "from the botanical and artistic standpoint." Their medical aspect she leaves to specialists in that science, but even so she has much to say which cannot fail to attract the pharmacist who takes up her book. Indeed, it is long since a work appeared (not dealing directly with his craft) that is worthier of a place on his shelves. It ought to stand beside Wootton's "Chronicles of Pharmacy."

The artistic features of the book make the first appeal. Its twenty-one full-page plates are all of great interest

* "Herbals: their Origin and Evolution: a Chapter in the History of Botany, 1470-1670." By Agnes Arber, D.Sc., etc. (Cambridge: At the University Press, 1912.) 10s. 6d.

and many of them of rare beauty, while the text-figures, of which there are considerably over a hundred, are even more important as illustrations. These are drawn from the books reviewed, most of which are not easily accessible even to students. Among the more beautiful of the plates are Nos. I., II., and XV., from the sixth century manuscript of Dioscorides, known as the Codex Aniciæ Julianæ in the Library at Vienna. These are figures of plants, notably naturalistic and modern in appearance. More beautiful even than these are No. XVII., a study of *Aquilegia vulgaris*, by Albrecht Dürer, and No. XVIII., a similar study of *Ornithogalum umbellatum*, by Leonardo da Vinci. More curious than beautiful are Nos. XVI. ("Dracontea") and V. ("Mandragora"), both from the fifteenth century printed edition of the "Herbarium Apuleii Platonicum." Several excellent reproductions of portraits of famous herbalists are also given among the plates; one of Fuchs, from the first edition of his "De Historia Stirpium" (1542), is the frontispiece of the book; our own Gerard, from the edition of 1636; Parkinson (who looks like a character from one of Ben Jonson's humorous plays); and the unhappy-looking Culpeper, from his "Physicall Directory," are also here. Really magnificent portraits from originals less accessible are also given of Lobel, Gaspard, Bauhin, Camerarius, and others. The text-illustrations are too numerous for detailed description. Mrs. Arber is able to include the Tree of Paradise from the "Ortus Sanitatis" (1491), with the serpent-woman Lilith, Adam's first wife, peering from among the branches. There is a very similar illustration in Queen Mary's Psalter, and Michael Angelo has a magnificent fresco of the subject in the Sistine Chapel.

The subject of plant-illustration naturally occupies a good deal of Mrs. Arber's text. The illustrations are, indeed, the most valuable feature of a good many herbals, being often a better guide to the identification of plants (one of the chief objects of such books) than the descriptions themselves, the latter being in many cases too vague to be of any practical use, and in others positively misleading. Before there was any really scientific classification of plants, or any methodical terminology, it was (as Mrs. Arber says) almost impossible to describe with accuracy, and as a matter of fact the attempt was not often made when the plant was a familiar one. "Too well known to need description" was then the formula used. Even the illustrations were in many cases conventional, drawn in the first instance without "the eye on the object," and repeated from book to book without question. The art was at its zenith, says Mrs. Arber, between 1530 and 1590, and the only collections of woodcuts of really first-rate importance were those of Brunfels, Fuchs, Matthioli, Plantin, Gesner, and Camerarius. The last two, however, belong to a different school from the others. Brunfels excels in naturalistic drawing, and is the first to apply it to the illustration of a botanical book. The date of his "Eicones" is 1530; Fuchs (1545) equals him in truth of drawing and excels him in decorative qualities. Matthioli (1586) differs in style from them both, but has perhaps equal excellencies of his own. His details are more elaborated, and shading is more used. The great Antwerp firm of Plantin, which produced the "Pemptades" of Dodoens (from which Gerard stole most of his Herball), were renowned for their printing, and gathered together a remarkable set of woodcuts, from which the illustrations in Lobel's, de l'Ecluse's and other herbals were largely drawn. Of all the five collections named, as of many others, Mrs. Arber gives numerous examples. The comparison of one with another is in itself an education in the subject. The illustrations in our English "Grete Herball" were "degraded copies" from an early German book known as the "Herbarius zu Teutsch"; those in Turner's book are mostly copied from Fuchs; Lyte's are from de l'Ecluse, of whose version of Dodoens his "Herball" is a translation; those of Gerard's first edition were from blocks first used for Theodor's "Eicones plantarum" in 1590; those of his second edition (Johnson's) were from Plantin's blocks, already referred to; Parkinson's were mostly copied from Gerard.

The evolution of botanical science as it is traceable in herbals is admirably set forth by Mrs. Arber. She shows

how in this as in other sciences speculation preceded observation, and until the Renaissance the influence of Aristotle was paramount. Theophrastus, however, and Albertus Magnus (the most famous Aristotelian botanist of the Middle Ages) did not neglect the description of plants. Both in this respect and as regards classification Albertus was far before the more purely medical botanists of his day. The earlier herbalists, in fact, made little or no attempt at classification; they were interested in plants as individuals, and with regard mainly to their uses. The first printed book in which strictly botanical information is given is the Encyclopædia of Bartholomæus Anglicus, which appeared about 1470. It was followed some five years later by the "Book of Nature" of Konrad von Megenberg, of which an English translation was published before the end of the century. The matter of both these books was much earlier than their appearance in print. So was that of the Herbarium of Apuleius Platonicus, which was, indeed, the main source of the Saxon Leechbook, a manuscript of which made about A.D. 1000 is preserved in the Bodleian Library. This herbal was first printed in 1484, or thereabouts, and was followed at short intervals by the publication first of a Latin and then of a German "Herbarius," which had, however, no connection with it. Upon the German book the later "Ortus Sanitatis" was founded, first published at Mainz in 1491. The German book was translated into many languages, and the French "Le Grand Herberier," which was the original of our own "Grete Herball," is regarded by many as having been founded upon it. This, however, has recently been questioned. The great group of German herbalists, Brunfels, Bock, Fuchs, and Cordus, belong principally to the first half of the sixteenth century. It is from them, but chiefly from Fuchs, that Dodoens and others, whom our English herbalists so slavishly copied, derived their inspiration. Each man added something of his own, but some of them very little, and there is a strong family likeness common to them all. The most original of the Englishmen appears to have been William Turner, who was in every respect a remarkable man. Physician and divine, an ardent Protestant controversialist, and "the Father of English Botany," a wide traveller, and a man of independent thought, it was during his exile for conscience sake that the greater part of his "Herball" was published at Cologne in 1562, an instalment having appeared in London eleven years before. Previous to this was his book of plant-names, and still earlier his "Libellus de re herbaria novus," in which the localities for many of our native British plants are for the first time recorded. The advance shown by Turner on the two English herbals which preceded his, the anonymous "Banckes'" of 1525 and the "Grete Herball" of the following year is immense; he made vigorous war on many of the current superstitions of the day, and his book was to a considerable extent the result of his own observation. Lyte was confessedly a translator; Gerard, as his editor Johnson confesses, a fraudulent user of another man's translation; and Parkinson did little more than improve and supplement the labours of his predecessors. Lobel's "Adversaria" (written in collaboration with Pena) was remarkable for its advanced system of classification, based on resemblances and differences between the forms of the leaves. Lobel, of course, was not an Englishman, but he was botanist to James I., had charge of Lord Zouche's garden at Hackney, and died at Highgate. Mrs. Arber devotes one chapter to what she well calls the backwaters in the main stream of botanical progress, the superstitions of "signatures," and astrological botany, of which Cole and Culpeper respectively are the chief English exponents. Paracelsus, as might have been expected, held both doctrines. Cole, though strong on signatures, was contemptuous of astrological influence. He argued that plants could not be subject to the stars because they were created before them. "Plantæ were, even when Planetæ were not"! These superstitions do not occur in the works of the better herbalists of the sixteenth and seventeenth centuries. In conclusion, Mrs. Arber's book may be again heartily commended; it is as interestingly written as it is beautifully produced.—C. C. B.

THE CONFERENCE PRESIDENT AND MRS. UMNEY.

IN the appreciation of the President of the British Pharmaceutical Conference published in our issue of July 19 no reference was made to Mr. John C. Umney's social qualities, yet to many these are known to be as excellent as his commercial and professional distinctions. The omission was of purpose intent, for in his social success Mr. Umney has gone hand in hand since July 14, 1892, with the lady who became his wife on that day, and who during the intervening twenty-one years has been with him in most social functions connected with pharmacy, especially to the Conference meetings and to the Chemists' Ball, of which Mr. Umney was for many years the Secretary.

Since Barrie wrote "What Every Woman Knows" some

self-centred men have begun to realise what they owe to their wives. There was no need of the play in Mr. Umney's case, for as a hostess and a leader in the social side of pharmacy his wife has acquired a reputation equal to her husband's in the more prosaic pharmaceutical matters. Nor does she lack interest in the latter; but she has that rare gift that belongs to clever wives of hiding the interest to "the general," and keeping it for the man who most appreciates it. Mr. and Mrs. Umney were good enough to get Bassano to take for *THE CHEMIST AND DRUGGIST* the photograph which is reproduced in the centre of this page. Those who had the privilege of shaking hands with them when they received the guests in the Guildhall of the City of London on Monday evening will see how good the likenesses are. They have often figured together at Conference functions, but that

occasion in their native city was pre-eminently one that will be most memorable to them, as well as to members of the Conference. On the occasion of Mr. and Mrs. Umney's marriage the following paragraph appeared in *THE CHEMIST AND DRUGGIST*, July 23, 1892:

"There was a good representation of pharmacy at St. George's, Bloomsbury, last Thursday, when Mr. John C. Umney was united in the bonds of matrimony to Miss Constance Ellen Carter. Mr. J. Bendall, the eminent organist of the Albert Hall, provided a rare treat for the assembly in the church by performing on the organ the Bridal March from 'Lohengrin,' Mendelssohn's Wedding March, and other well-selected music. Mr. W. F. Umney, M.B., of Bethlehem Hospital, eldest brother of the bridegroom, was 'best man,' and the married pair were greeted with a warm cheer from the students as their carriage rounded the north-western eape of Bloomsbury Square on the way to the bride's home. Mrs. Carter's 'At Home' at 31 Bedford Square that afternoon was very crowded. Among the guests were Mr. and Mrs. Carteighe, Mr. and Mrs. Martindale, and several of the bridegroom's contemporaries.

students at Bloomsbury Square some years since. The presents were very numerous and valuable. Among them was a handsome and massive dining-room clock, the gift of the employees of Messrs. Wright, Layman & Umney, in which firm the bridegroom is a partner. Everyone in the firm's employment contributed to this gift, and joined in hearty good wishes for the prosperity and happiness of the young pharmacist, who, as we all know, has had the inestimable advantage of starting his career with a much-honoured name, but who has shown that he does not intend to rely on that exclusively."

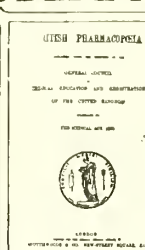
Of the children born to Mr. and Mrs. Umney two survive—a son, John Howard Umney, who, though still in his teens, is taller than his father. He is now a scholar in the Charterhouse School at Guildford, and is destined to follow in his father's footsteps as a City of London merchant, after his sojourn in the Temple of Æsculapius. A daughter, Sylvie, who has not yet



MR. AND MRS. JOHN C. UMNEY.

entered her teens, is, like her mother, a born musician, and has already given evidence of talent that the rising generation in pharmacy may have the opportunity of judging. In the meantime she is the light of a happy English home.

PUBLICATION OF THE BRITISH PHARMACOPŒIA

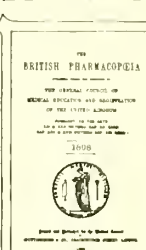


*Presidential Address to the Jubilee Meeting of
The British Pharmaceutical Conference*

by

John Charles Umney, Ph.C., F.C.S.

London, July 22, 1913.



I AM sensible that a very high honour has been conferred upon me in your inviting me to preside over this, the Jubilee Meeting of the British Pharmaceutical Conference, and I tender my sincere thanks to you for this mark of your confidence. I feel a double responsibility, firstly in that at this very important meeting I have the privilege of taking the place which has been occupied by the distinguished men who have preceded me in this Chair, and secondly, that I am the first "hereditary" President of the Conference, my father having in 1889 and 1890 presided at the meetings in Newcastle and Leeds. It might have been fitting that on this, the Fiftieth Annual Meeting of the Conference, the President should review the work of the Conference since its inception, but I put that subject on one side because an adequate historical review would encroach unduly upon the time of this meeting and try your patience utterly. Moreover, I believe the time is opportune to consider a subject which is of paramount importance to pharmacy. I refer to the revision and publication of the *British Pharmacopœia*.*

The conditions of pharmacy and medicine have changed

* The title-page of the 1864 B.P. is inserted in reduced facsimile in the left of the heading, and that of the 1893 B.P. in the right.—EDITOR, C. & D.

much since the Medical Acts of 1858 and 1862 brought the *British Pharmacopœia* into being and entrusted its publication to the General Medical Council. The character of the pharmacist's calling has been affected greatly by legislation and judicial decisions, upon some of which I shall speak later. It will be conceded that the position of the pharmacist to-day, whatever his sphere of activity, may be, is higher than it has ever been, and that of necessity he is a man of considerable training and scientific attainment. When I say that the moment is opportune for consideration of the statutory provisions respecting the *British Pharmacopœia*, and how these should be modernised in consonance with progress in medicine, pharmacy, and science during the lifetime of this Conference, I have in mind a special reason of the very highest importance—viz., the State recognition of the pharmacist as the dispenser of medicines. In my opinion this recognition is a solid foundation upon which can be built up all the arguments for the pharmacist-dispenser getting a State-granted share with the medical prescriber in the preparation and publication of the *British Pharmacopœia*, which as the preface states (page viii) is intended as a guide to the members of the medical profession and those engaged in the preparation of medicines.

In order that we may understand clearly the claims of the two branches of the healing art, and make workable suggestions for future practice, consider the subject in the following divisions:

(1) Past and present positions of the medical practitioner and the pharmacist.

(2) Positions of the General Medical Council, and the medical profession, and of the Pharmaceutical Societies and pharmaceutical calling as regards Pharmacopœia revision and publication.

(3) A survey of the methods of revision and publication of the Pharmacopœias of the world.

(4) Suggestions for future revision and publication of an Imperial British Pharmacopœia.

Before proceeding to the consideration of these various points in detail, I desire to make one pronouncement, which I do with a full sense of the responsibility that it entails. It is this: that the *British Pharmacopœia* of 1914 (for presumably it will be so dated) is almost ready for publication, and in connection with the revision of that work the Committee of Reference in Pharmacy nominated by the Councils of the Pharmaceutical Societies of Great Britain and Ireland has done its work to the best of its ability, and in all loyalty to the General Medical Council, but I am confident that it is the last occasion upon which pharmacists will aid in the revision of the *British Pharmacopœia* on the conditions which now obtain. There must be no misapprehension on this point in the minds of the General Medical Council or the medical profession generally, for besides the State recognition of pharmacists as dispensers of medicine that I have mentioned as a special reason, since the statutory conditions for Pharmacopœia publication were formulated pharmacists have been by education and registration (on conditions formulated in later Statutes) established in the domain of physic as the legally qualified compounders of medicine. The time has arrived, in short, when the conditions favour readjustment of functions medical and pharmaceutical, and I argue that this should be done with amity on both sides.

THE PHYSICIAN, APOTHECARY, AND DISPENSER.

When the late Professor Theophilus Redwood, the first Pharmaceutical Editor of the *British Pharmacopœia* (1867), presided at our meeting in 1877, he described the evolution of the apothecary as the coadjutor of the physician and surgeon, and the gradual change of the apothecary in the course of a century and a half into a medical practitioner, so that the pharmaceutical part of his calling was neglected, and it was taken up by chemists and druggists.

It was in the year 1694 that the apothecaries, whose numbers had risen to about a thousand, had become an influential body, and by practising medicine as well as pharmacy had excited the jealousy of the physicians, who suffered from this encroachment, and endeavoured to reduce their rivals to their original position of vendors of drugs. The contest was an acrimonious one, and pamphlets were published on either side; the apothecaries asserting that the assistants employed at the dispensaries of the physicians were unqualified and the drugs of poor quality, whereas the apothecaries' training, which consisted of eight years' apprenticeship, knowledge of drugs and plants, frequent use of them in shops, visiting markets and physic gardens, etc., gave them an experience and instruction which made them eminently fitted for their calling.

It is not easy to arrive at the truth of the many exaggerations which were put forward in this controversy, but it is evident that the dispensaries of the physicians were very popular, and that these assistants, employed and instructed by the physicians, became dispensing chemists on their own account, also that some of the apothecaries followed the example, from which is dated the origin of the chemist and druggist.

In the year 1723 the College of Physicians was empowered by Act of Parliament to visit and examine the shops of apothecaries, and many stories are recorded of the particularly dictatorial, offensive, and extremely unfair way in which such supervision was carried out. The Corporation of Apothecaries obtained a Charter in

the year 1748, or at any rate increased power was conferred upon them, probably by an Act of Parliament, empowering them to license apothecaries to sell medicines in London or within seven miles.

In a pamphlet entitled "The Apothecaries Mirror," published in 1719, arguments were brought forward to show that the apothecary ought not to practise medicine, it being stated that the business of an apothecary is to compound certain drugs according to physicians' or surgeons' prescriptions; the statement being also made that the compounding of drugs prescribed, and knowing why they are prescribed, are two different things; and that, further, the natural history of the human body and acquaintance with the mechanisms and operations of Nature are heights of knowledge at which few apothecaries arrive.

The first Association of Druggists appears to have been the General Pharmaceutical Association of Great Britain, which first met at the Buffalo Tavern, Bloomsbury Square, in the year 1794, and from the petitions presented by a Committee of that body to the College of Physicians, the Corporation of Surgeons, and the Society of Apothecaries in 1795, it is evident that the first organised attempt was made to enter upon the position which the chemists and druggists of to-day occupy—namely, as dispensers of medicines. In 1802 the apothecaries and chemists were brought together and induced to join hands for the purpose of protecting their mutual interests against the operations of the Medicine Act passed on the third of June of that year.

Many controversies continued between the College of Physicians and the apothecaries and the chemists and druggists, and suggestions were made that an Examination Board composed of physicians, apothecaries, and chemists should be formed, who would see that adequate education and examination of chemists and druggists should be carried out. It was not until 1841, however, that, probably on the suggestion of Mr. Bell, attempts were made to form a definite society to safeguard the permanent interests of chemists and druggists.

We may usefully summarise this brief historical survey of the status of the physician, apothecary, and pharmacist, by a reference to a General Meeting of the Pharmaceutical Society in May 1883, when Mr. R. W. Giles stated that pharmacists, or apothecaries as they were then, were in 1809 appointed members of a Joint Committee with Fellows of the College of Physicians for the compilation of the Pharmacopœia. At that time chemists and druggists were not organised, and so were unable to claim to be consulted in the matter of the Pharmacopœia; even when the Pharmaceutical Society was instituted, in 1841, and incorporated in 1843, no claim was put forward for participation in Pharmacopœia work. Even when the Medical Act of 1858 was passed and the preparation of a Pharmacopœia was transferred from the Colleges of Physicians of the three countries to the General Council of Medical Education and Registration, the Society had not reached a stage at which it could consider itself as representative of compounders of medicines in the three countries. Since 1868 and 1875, however, the position is entirely altered, for the Pharmaceutical Societies of Great Britain and Ireland have by prescribed and regulated education, statutory examinations, and encouragement of research, made immense strides in the science and practice of pharmacy. It needs no better proof of the necessity of the help of the pharmacist in the compilation of the *British Pharmacopœia* than the request of the General Medical Council for co-operation which was made in connection with the 1890 Addendum to the edition of 1885, and in the preparation of the edition of 1898.

HISTORY OF PHARMACOPOEIA REVISION AND PUBLICATION.

The first London Pharmacopœia was published by the College of Physicians in 1618, this being the first step towards producing a regular standard for the guidance of dispensers of medicine. It was doubtless an imperfect production, and subsequent editions were published by the College in 1621, 1632, 1639, 1650, 1677, 1721, 1746, 1788, 1809, 1815, 1824, and 1836. The

Pharmacopœia of 1809 was prepared by a Committee of the Fellows of the College of Physicians in conjunction with a Committee of the Apothecaries' Company, in whose laboratories the necessary experiments were made.

The first Edinburgh Pharmacopœia was published in 1699, and subsequent editions in 1722, 1736, and 1744. Eleven editions were also published from 1756 to 1841, the Pharmacopœia being in Latin until 1839.

The first Dublin Pharmacopœia was published in 1794, and another in 1805. These were described as "specimen Pharmacopœias," the first edition printed for actual use being in 1807. The third edition of the Dublin Pharmacopœia appeared in 1851, the intermediate one having been published in 1826, and therefore having had a very long life.

It was really Peter Squire who pointed out at one of the Meetings of the Pharmaceutical Society the necessity for the formation of a National Pharmacopœia, directing attention to the desirability of having one Pharmacopœia for Great Britain and Ireland, in place of the three separate Pharmacopœias hitherto issued by the Colleges independently.

The Medical Act of 1858 was the means of bringing about important changes in the medical profession, and at least one important change in relation to pharmacy. The duty was assigned to the General Council of Medical Education and Registration of causing, etc., and the amending Act of 1862 provided that the *British Pharmacopœia* should supersede the Pharmacopœias of London, Edinburgh, and Dublin. The London College had been making preparations for a new edition of the Pharmacopœia, and had arranged for the assistance of the Pharmaceutical Society.

At the first meeting of the General Council held in the Hall of the Royal College of Physicians, London, in 1858, a Committee was appointed to prepare and publish a National Pharmacopœia, which Committee requested the co-operation of the three Colleges of Physicians in the work. That Committee also was instructed to communicate with the Pharmaceutical Society for co-operation, and, another important point, the sum of 5000*l.*, taken from the registration-fees of existing medical practitioners, was voted by the General Council to defray the cost of preparing the Pharmacopœia for printing.

The records of the proceedings of the Pharmaceutical Society of that time show that the President, Mr. Jacob Bell, was particularly solicitous for the credit of his brethren, especially because he found that practically three or four members only of the London Committee contributed anything to the work of Pharmacopœia revision.

In the early part of 1864 the first *British Pharmacopœia* was published, and attracted a great deal of attention. It was evident, however, that the three previously existing Pharmacopœias had their representatives, and being located in London, Edinburgh, and Dublin, were too far removed to admit of concerted working, so that the Pharmacopœia produced bore evidence of many compromises, which were decidedly unfavourable to the work as a whole. The Medical Council were aware of the failure of their first attempt to produce a Pharmacopœia, and decided to bring out a new edition at as early a date as possible.

The preface of the Pharmacopœia of 1864 begins by stating that of the several functions conferred upon the General Medical Council by the Medical Act of 1858, not one *had caused the Council more anxiety* than the preparation of the *British Pharmacopœia*. It is true this anxiety is stated to have been based upon the difficulty in superseding three Pharmacopœias by one, each of them long held in great repute, to reconcile varying usages in pharmacy and prescriptions of the peoples of three countries, hitherto in these respects separate and independent. The preface concludes with these words:

"The Council warn all apothecaries and pharmaceutical chemists that on the publication of the *British Pharmacopœia* it will be necessary in order to discharge safely their duties to the public that they should duly alter or

*There is a point to
which I have referred
which should not be
forgotten. The first issue
of the Pharmacopœia was
constituted by "three
Committees" the London
College, the Edinburgh
College and the
Scottish College and the
constituted a committee
to have the Appt. to
the College - I suppose
Smith, and others
to (assist) - I suppose
and others - I have not
got all the names -
not having time to look
them up.*

*The matter was the issue
which was considered and
that of the old work
paper - Dr. Thomas
Watson having
been the chair of the College
of Physicians
it a "dangerous
book!"*

"EVIDENCE OF MANY COMPROMISES."

In illustration of this remark by the President we print the above facsimile of a P.S. to a letter written by the late Sir Richard Quain, M.D., F.R.S., regarding the first *British Pharmacopœia*. The whole letter had reference to the subject of Pharmacopœia revision. Sir Richard Quain was not averse to pharmacists participating.—EDITOR, C. & D.

destroy all pharmaceutical preparations made according to previous and now altered formulæ."

Then to their own body they say:

"The Council must further caution all medical practitioners, whether at home or in the Colonies or in the Public Services, that in order to exercise their profession safely it is incumbent on them to make themselves familiar with the changes effected by the present work."

The Pharmacopœia of 1867 was edited by Professor Redwood, of the Pharmaceutical Society, and Mr. Robert Warrington, of Apothecaries' Hall, under the direction of a Committee of the Council, Dr. Quain acting as Honorary Secretary, he being one of the nominees of the Privy Council on the General Medical Council. "Additions" to the Pharmacopœia of 1867 was published in 1874, in April of that year. Following the reading of a paper by my father, Charles Umney, on the "Additions," the "British Medical Journal" made the following important comment:

"Many of the objections urged by Mr. Umney seem to indicate the necessity of giving greater prominence to the element of practical pharmacy in the Pharmacopœia Committee of the Medical Council. This has long been done in other countries, and the adoption of such a course would certainly be advantageous here; for, though it is true that the decision as to the medicines to be comprised in the Pharmacopœia must always remain with those who have to prescribe their use, still, questions as to the best means of preparing them for various purposes call greatly for the aid of the practical pharmacist, who, being daily occupied in such work, is enabled to bring to bear the results of his experience, so as to advantageously promote the objects of the physician. If this were properly done, we should then, perhaps, hear less of complaints that official formulæ were inferior to other methods of preparation. The material services which Professor Redwood has already rendered in this direction may, perhaps, not without advantage, be supplemented by the aid of other pharmacists."

The first definite proposal that the Pharmaceutical Society or Pharmacists should be associated with the General Medical Council in the publication of the *British Pharmacopœia* was moved by Mr. Robert Hampson at the meeting of the Council of the Pharmaceutical Society in July 1874, in the following terms:

"That this Council respectfully urges upon the General Medical Council the desirability of having appointed a Joint Pharmacopœia Committee of Physicians and Pharmacists, for the purpose of preparing any future edition of the *British Pharmacopœia*, or preparing any further Addendum to the present issue."

This Council also suggests that it would be an equitable and desirable arrangement if the Council of the Pharmaceutical Society were to nominate the Pharmacæutists on the proposed Joint Pharmacopœia Committee."

In strong support of that suggestion Mr. Thomas Greenish spoke, referring to the constitution of the Pharmacopœia Commissions or Committees of other countries. Anyone who reads the discussion which followed will see, however, that a weak-kneed policy was adopted with regard to Mr. Hampson's proposal, and several of the speakers appeared to think that the medical profession would be offended by any deliberate claim to participation in the production of a Pharmacopœia. So the motion was modified on the suggestion of Mr. Sandford to read in less dictatorial fashion, as follows:

"That this Council respectfully urges upon the General Medical Council the desirability of associating more practical pharmacists with any Committee which may be appointed for the purpose of preparing any future edition of the *British Pharmacopœia*, or any further Addendum to the present issue. This Council would be prepared to nominate such pharmacists in the event of the Medical Council agreeing to their proposal."

AT THE FIFTH INTERNATIONAL PHARMACEUTICAL CONGRESS,

held in London in August 1881, Michael Carteighe presented a paper on Pharmacopœia Revision, in which he stated that the necessity for the association of representatives of pharmacy with the medical profession in the compilation of a Pharmacopœia is a proposition self-evidently reasonable to those members who had come to that meeting from abroad. He said:

"It would seem a natural arrangement that while the representatives of medicine decide what drugs and remedies are to be inserted in the volume, the formulæ of the preparations best adapted to their administration would be most conveniently determined by practical pharmacists."

One of the points strongly urged by Mr. Carteighe, and one to which at the present time we strongly adhere, is that the information contained in each edition of the *Pharmacopœia* should be of comparatively recent date, because the authorities entrusted with the administration of the Sale of Food and Drugs Acts regard the *British Pharmacopœia* as the standard for preparations used in medicine which are mentioned therein. A subsequent resolution passed at the end of the Congress reads as follows:

"That in the opinion of the Fifth International Congress meeting in London, it is the duty of all pharmacists to urge that in future revision of the National Pharmacopœia it is necessary that there should be a permanent Committee or Commission, comprising among its members the largest possible number of pharmacists. It should be the duty of this Commission during the periods between the publication of the successive editions to investigate such new drugs as make their appearance in the drug-market, in order to determine the characteristics of their genuineness, and at the same time to submit the formulæ given in the *Pharmacopœia* to a continuous examination. The results of this work should be brought to the knowledge of those interested in an appropriate manner by publication before the final promulgation of that work."

The observations made at that Congress by the pharmaceutical representatives of other countries showed that whilst there are many points of difference in the methods of revision of the different countries, they have one feature in common, which is the provision that whilst medical men are present to decide as to the introduction of new or the rejection of obsolete remedies, the practical skill of pharmacists is utilised in working out the best methods of preparation.

THE PHARMACEUTICAL COUNCIL AND B.P. REVISION.

In the year 1883 we come to the most interesting portion of the history of Pharmacopœia revision and publication. In April 1883 Mr. Hampson moved at the Council-meeting of the Pharmaceutical Society:

"That inasmuch as the Medical Acts Amendment Bill, introduced into the House of Lords, contains no provision by which pharmacists shall be empowered conjointly with members of the Medical Council to revise and prepare future editions of the *British Pharmacopœia*, the Library and Museum Committee be authorised to take immediate steps with a view to remedy this omission."

In the speech which he made in support of this, Mr. Hampson referred to the fact that on the Continent of Europe pharmacy, as a distinct branch of medicine, had received the sanction of the State for many years, and it was not to be expected that they in England should at once receive the reward which the education and improved culture of pharmacists entitled them to. It seemed to him that the Council was bound in self-respect to make this request, for unless it did so pharmacists would probably have to wait twenty years before they could do so with any effect. Not twenty but thirty years have gone, and we still wait.

Speeches in support of this resolution were made by Dr. Symes, our President in 1897 and 1898. He urged that the compounding and preparation of medicines is essentially the function of the pharmacists, who were educated for that purpose. Mr. Schacht also put forward a suggestion which he had previously made to the effect that there should be representation of the Pharmaceutical Society upon the Medical Council.

Although it was recognised that the association of Professor Redwood in the compilation of the *Pharmacopœia* of 1867 was essentially a recognition of pharmacy and the Pharmaceutical Society, that was not in itself sufficient, in that the Society should be represented by its own active and working members.

As a result of this resolution and the opinions which had been so unanimously voiced, Mr. Michael Carteighe, President of the Pharmaceutical Society at that time,

wrote a letter to the Privy Council, the exact terms of which I quote:

"Pharmaceutical Society of Great Britain,
17 Bloomsbury Square, W.C.
April 12, 1883.

C. Lennox Peel, Esq., C.B.

DEAR SIR,—I am requested by the Council of this Society to call the attention of the Lord President of the Council to the provisions of the 'Medical Acts Amendment Bill' in so far as they relate to the preparation and revision of the *British Pharmacopœia*.

This volume is to be produced under the direction of the Medical Council, but there is no instruction as to what class of persons is to constitute the Committee which must necessarily be appointed for compiling and revising the *Pharmacopœia* previous to its publication.

In this country, hitherto, that Committee has consisted solely of members of the medical profession, whereas in all other European countries the constitution of that Committee is fixed by law, and it includes, in every case, a considerable number of pharmaceutical chemists, and in the United States of America pharmacists form a majority of the Committee of Revision.

The decision as to what drugs or medicines shall be introduced into or expunged from the *Pharmacopœia* rests with the medical members of the Committee, and the working out of the chemistry and pharmacy of the preparations and the manner in which they should be made rests with the pharmaceutical members.

The Council of this Society considers that this or some other method should be followed in this country and laid down in the Bill now in the House of Lords. It is supported in this view by many members of the medical profession and by articles which have appeared from time to time in the medical Press. Moreover, inasmuch as by the Pharmacy Act, 1868, and the Sale of Food and Drugs Acts, the *Pharmacopœia* is taken as the standard of purity and strength of such drugs and medicines as are contained therein, it seems desirable that the practical experience of pharmaceutical chemists should be made available on the Committee.

I am desired by the Council to solicit the favour of a personal interview with the Lord President before the Bill is considered in Committee, to enable me to explain more fully its views and point out other considerations bearing on the subject.

I am, dear Sir,

Yours faithfully,

(Signed) M. CARTEIGHE, President."

In addition to that memorial, one was addressed to the General Medical Council by the President and Council of the Pharmaceutical Society of Ireland, which pleaded that "in any body appointed to this purpose" (namely, the periodic revision of the *British Pharmacopœia*) "due representation should be accorded to pharmacists, as having special qualifications for aiding in an undertaking of such importance to the country."

A further memorial, in addition to the letter written by Mr. Carteighe, was addressed to the Privy Council by the Pharmaceutical Society of Great Britain in May 1883, in which the relative positions of medicine and pharmacy were most clearly set out, and comparisons made with the methods of revision in other countries, including the United States of America. Not only was reference made to the methods of compilation desirable for the perfecting of the *Pharmacopœia* as a guide to prescriber and dispenser, but allusion was made in the following pointed words to the use of the *Pharmacopœia* as a standard under the Sale of Food and Drugs Acts and the Pharmacy Act:

"Moreover, inasmuch as by the Pharmacy Act of 1868 and the Sale of Food and Drugs Act, the *Pharmacopœia* is taken as the standard of purity and strength of such drugs and medicines as are contained therein, it seems desirable and equitable in the public interest that the practical experience of pharmaceutical chemists should be made available on the said Committee. . . . Since the value of the *Pharmacopœia* as a legal standard depends very much on the loyalty with which pharmaceutical chemists and druggists conform to its instructions, it seems politic to associate Members of the Pharmaceutical Body with the representatives of the Medical Profession on the Committee."

The Council of the Pharmaceutical Society suggested that the following clause should be inserted in the Medical Acts Amendment Bill, then under consideration:

"For the purpose of compiling the said *Pharmacopœia* there shall be established a Pharmacopœia Committee consisting of six medical practitioners, to be nominated by the Medical Council, and five pharmaceutical chemists, four to be nominated by the Council of the Pharmaceutical Society of Great Britain, one of the four to be resident in Scotland, and one by the Council of the Pharmaceutical Society of Ireland."

Whilst these negotiations with the Privy Council were in progress, a bomb was thrown into pharmaceutical circles by the announcement of the General Medical Council that the three Professors of the Pharmaceutical Society, Redwood, Bentley, and Attfield, had been appointed editors of a new *Pharmacopœia*. I need only mention the very bitter controversy which followed a step that seemed to be the undermining of the position of the practising pharmacist by the Society's professorial staff. The three professors, in a letter printed in the "Pharmaceutical Journal" of May 1883, sought to justify the position which had been conferred upon them, but looking back over the period of thirty years, one can see most clearly that had the professors not taken up the position which was offered to them the full and equal recognition of the practising pharmacist in *Pharmacopœia* revision would probably have been established long ere this. The pharmaceutical sentiment of that day and of this was expressed by the "Pharmaceutical Journal" of June 28, 1884, when it stated that—

"Under the fostering influence of the Pharmaceutical Society the followers of pharmacy have gradually assumed a more worthy position in this country; it has been increasingly felt that the time was at hand when they might reasonably ask for a recognised position in the Committee charged with the revision of future editions of the text-book by the terms of which they are bound much more stringently than are medical practitioners."

THE ATTFIELD PERIOD.

The paper read by the late Professor Attfield before an Evening Meeting of the Pharmaceutical Society on February 14, 1894, will probably be still fresh in the minds of some of those who listened to it. In that paper Professor Attfield stated, in his private capacity, the aims and objects of the Imperial British Pharmacopœia, and referred, among other points, to the satisfaction that should be felt by pharmacists in the course that was then being adopted in connection with *Pharmacopœia* revision. It will be remembered that Professor Attfield had prepared for the General Medical Council a report on the revision of the *British Pharmacopœia*, in which he had referred especially to the official recognition of pharmaceutical research, and this official recognition rested upon a series of reports on the progress of pharmacy in its relation to the future revision of the *Pharmacopœia* of 1885, which he prepared and presented to the Pharmacopœia Committee of the General Medical Council, beginning with the year 1886. He stated that in this way encouragement was given to pharmacists to continue to make original pharmaceutical investigation, and that since the pharmacists of the Kingdom were organised into a public body by the foundation of the Pharmaceutical Society of Great Britain, those members of the craft, whether pupils, assistants, or principals, who possessed the necessary powers of accurate observation, reflection, and description, had in fact printed the results of much investigation, ranging from the humblest note to the most advanced research, the outcome of personal cost and effort. The Professor subsequently added that in his opinion, as regards pharmacy, the *Pharmacopœia* of 1885 was the pharmacist's own *Pharmacopœia*, and, referring to the galenic formulae, he stated that they were largely constructed by pharmacists, who had supplied the chief pharmaceutical materials for the edifice, their own pharmaceutical experts being employed to put those other materials together. He went on: "But the full and free recognition of pharmaceutical research by the Medical Council is still more obvious in the 1890 Addendum to the *Pharmacopœia*," apparently because on page 7 of the Addendum there appear not only the names of the Pharmacopœia Committee of

the General Medical Council, but also those of the Pharmaceutical Pharmacopœia Committee, to be taken as evidence before all the world, not only of the union of Medicine with Pharmacy, but of the liberal recognition of that union by the Medical Council. Whether these statements, made, as they doubtless were, in all good faith, were really believed by the General Medical Council, one cannot say. There can be no question, however, that they did not represent the opinion of pharmacists in general.

It may be remembered that towards the end of 1889 Dr. Quain, acting on behalf of the General Medical Council, addressed a letter to the Pharmaceutical Society asking for co-operation of pharmacists in connection with the publishing of an Addendum to the *Pharmacopœia* of 1885. As a result of that request a Committee was nominated, its appointment being referred to in the Preface of the work in the following terms:

"The Council has also had valuable assistance in the preparation of the work from a Committee of the Pharmaceutical Society of Great Britain, consisting of:

Mr. M. Carteighe, Pres., Chairman.	Mr. H. G. Greenish.
The Vice-President.	Mr. N. H. Martin.
Inglis Clark, D.Sc.	Mr. Martindale.
Mr. Elkin.	Mr. C. Umney.
Mr. Gale.	

Each of the Committees has had the advantage of the service of the Annual Reporter on the *British Pharmacopœia* to the Medical Council, who also has edited these forty-four Additions to that volume."

Assistance on the same lines was rendered to the General Medical Council by a Committee of the Pharmaceutical Society for the *Pharmacopœia* of 1898, the Committee consisting of the following members:

Mr. Walter Hills, President.	Mr. John Harrison.
Mr. Newsholme, Vice-President.	Mr. Joseph Ince.
Mr. M. Carteighe.	Mr. N. H. Martin.
Inglis Clark, D.Sc.	Mr. W. Martindale.
Mr. W. Gowen Cross.	Mr. Charles Umney.
Mr. Charles Ekin.	Mr. H. G. Greenish, Secretary.

In addition to the assistance of that Committee, the General Medical Council acknowledges that it has made constant use of important practical researches which have been carried out by British Pharmacists.

THE COMMITTEE OF REFERENCE IN PHARMACY.

In June 1904 the Chairman of the Pharmacopœia Committee of the General Medical Council wrote to the President of the Pharmaceutical Society of Great Britain, inviting the Council in co-operation with the Council of the Pharmaceutical Society of Ireland "to assist us"—(that is to say, the General Medical Council)—"by nominating expert pharmacists to constitute the proposed Committee of Reference in Pharmacy," and in December 1904 the President of the Pharmaceutical Society of Great Britain reported that the Committee of Selection of Nominees had reported and recommended those who have formed that Committee, similar nominations being made by the Pharmaceutical Society of Ireland.

A preliminary meeting of the Committee of Reference in Pharmacy with the Pharmacopœia Committee of the General Medical Council was held in February 1905. From that time, this Committee of Reference has been engaged upon revision of all the monographs of the *British Pharmacopœia*.

THE LATER HISTORY OF PHARMACOPŒIA REVISION

would not be complete without a reference to the resignation of the Chairman of our Reception Committee, now President of the Pharmaceutical Society, Mr. Edmund White, from the Committee of Reference, which took place in 1911, and upon which he made a full statement to the Pharmaceutical Council. Although in that statement he gave as the immediate cause the publication of the *Blue-book on the Practice of Medicine* by unqualified persons, those of us who know him well know that that was only the last straw which made Mr. White put forward his resignation. He held strongly to the view that the work pressed upon the Committee of Reference in Pharmacy was not what was originally

intended when the Committee was appointed—viz., with a view to answering specific points in connection with pharmacy—whilst those of us who have worked upon this Committee now know that it has practically been a Committee which has revised to the best of its ability practically every monograph of the *British Pharmacopœia*.

It is true that Professor Greenish, Pharmaceutical Editor of the *British Pharmacopœia*, is one of the Professors of the Pharmaceutical Society, and he is acting conjointly in the final editorial work with Dr. Nestor Tirard, but that does not amount to a recognition of equality of the practising pharmacists, who have contributed much to the knowledge that will be contained in the new *British Pharmacopœia*.

HOW FOREIGN PHARMACOPŒIAS ARE REVISED.

Having considered the relative positions in the United Kingdom of the medical profession and pharmaceutical calling as regards pharmacopœial revision over the past century, it will be convenient to review the conditions of Pharmacopœia revision in the principal countries.

It will be remembered that the delegates sent to the International Congress of Pharmacy at Brussels by the Pharmaceutical Society of Great Britain stated that this country appears to be the only one in which the National Pharmacopœia is compiled by a Commission from which pharmacists are excluded. Although this statement is not absolutely accurate, it is correct in so far as the only other Pharmacopœia from the preparation of which practising pharmacists are excluded is that of Italy, where the Pharmacopœia Commission is composed of one Professor of Chemistry, one of Pharmaceutical Chemistry, and one of Pharmacology. Reference also to the preface of the Japanese Pharmacopœia shows that although practising pharmacy is not directly represented, there are upon the Committee pharmacists of considerable practical experience, including the Professors of Pharmacy and Pharmacognosy in the Tokio University (the former of whom is also President of the Pharmaceutical Society of Japan), together with an Apothecary (Pharmacist) Colonel of the Japanese Army, one Chief Apothecary (Pharmacist) (1st Class) of the Japanese Navy, and the Chief Apothecary (Pharmacist) of the Imperial Court. In addition the Committee includes chemical experts representing the Imperial Sanitary Laboratory and the Metropolitan Police Office. It may be mentioned in connection with the publication of this Pharmacopœia that the first meetings of the Committee were held at the Home Office. The Committee was elected in 1904, the revision being completed in March 1906, and the Pharmacopœia was published in 1907—a very rapid revision, as will be seen.

Coming then to the Pharmacopœias in whose revision medicine and pharmacy are almost equally represented officially, it may be convenient to review the conditions of appointment and revision under which such Commissions or Committees work.

DEUTSCHES ARZNEIBUCH.

The German Pharmacopœia Commission appointed in 1886 was in 1900 superseded by the Health Council of the Empire, which, in conjunction with the Imperial Health Office, was entrusted with the preparatory work for the regulation of the Diet concerning the periodical additions and corrections to be made in the Pharmacopœia. According to the regulations issued by the Imperial Chancellor, with the approval of the Diet, a series of Committees was formed, of which the two Sub-Committees of the Committee of Medicines—namely, the Medical and Pharmaceutical Sub-Committees—had to do the work of the former Pharmacopœia Commission. There are twenty-six members on these Sub-Committees. They are experts, and include representatives of clinical and practical medicine, pharmacology, applied chemistry, pharmacy, pharmacognosy, and bacteriology, also medical representatives of the more important Federal States. Members of the Health Office and experts in special subjects may if necessary be invited to take part in the discussions of the Health Council of the Empire. The President of the Imperial Health Office is the

Chairman, and he also conducts the business of the Committee.

In connection with the revision of the last German Pharmacopœia, the President of the Imperial Health Council invited in July 1906 all pharmacists, physicians, and veterinary surgeons to make known their desires and proposals for the Fifth Edition, especially as regards the addition or omission of Articles, whilst on the instruction of the Imperial Chancellor 125 proprietors of large pharmacies in town and country were asked to state what medicines contained in the Pharmacopœia were seldom or never ordered, and this information was placed at the disposition of the Health Office. The information thus obtained served as a basis for the Committees of the Health Council of the Empire. It was agreed that the Pharmacopœia was in the first place to be regarded as an official book of formulae, and that this character should be retained; but it was further decided that it should be made more useful to apprentices and students, and also to physicians, without making it in any sense a text-book. Six members of the Working Committee were chosen as an Editorial Committee, and the final revision was completed in 1900, the Diet approving the draft in November of that year.

CODEx MEDICAMENTARIUS GALLICUS. (Pharmacopée Française.)

The French Pharmacopœia is edited by a Commission appointed by the Minister of Public Instruction. Formerly, this Commission was dissolved when the Codex had appeared. Now it has been replaced by a permanent Commission for editing the Codex and its Supplements, which sits in the Ministry of Public Instruction. It is presided over by the Director of Higher Education, a high functionary who comes immediately after the Vice-Rector of the Academy of France. In Paris the Rector is the Minister himself. The Commission has a Vice-President and three Secretaries, one of the latter, or Administrative Secretary, being an Officer of the Ministry (Chef de Bureau) and the others Members of the Commission, these being the Technical Secretaries, one for Chemical Pharmacy and one for Galenical Pharmacy. The Administrative Secretary deals with reports of the meetings, centralises the work, receives the edited monographs, transmits them to the printer, receives proofs, sends three copies to each member of the Commission, has charge of the body of the book, sends out the summons for the meetings, etc. Each of the Technical Secretaries has a list of the monographs which have to be revised. He keeps himself and also the members of the Commission informed as to the progress of the work; he records the monographs sent back for correction, and notes the observations made at the meetings and the decisions arrived at.

At the commencement the full Commission meets and decides upon the size of the page of the Codex, the type to be used, the quality of the paper, and similar details. Then it is divided into three Sub-Commissions, each of which is presided over by a President. The divisions are:

- (1) Sub-Commission for Chemical Pharmacy.
- (2) Sub-Commission for Galenical Pharmacy
- (3) Sub-Commission for Materia Medica.

One member of the Commission is specially charged with the editing of the monographs of veterinary medicine, another with those of the serums, extracts of animal organs, and the like.

Each Sub-Commission first decides what articles are to be retained, what are to be deleted, and what new ones are to be introduced. The decisions are submitted to the full Commission. The titles of the monographs being fixed, the Sub-Commissions set to work. Each monograph is first approved by the Sub-Commissions, then submitted to the full Commission, which votes for it to be set up. The proofs, printed first on one side, are corrected by the Authors and read again in the Sub-Commission and in the Commission. The corrected proofs are sent back to the printers, who return corrected proofs (revises) which undergo the same examination as the first. This work is repeated a third time.

The monographs are then made up into pages, one proof and a revise being examined. The monographs are therefore examined five times in all.

During this time the printer has to keep the whole of the book in type, and this means holding up type worth 60,000 to 70,000 francs for several years. As an arrangement of the monographs in alphabetical order has been adopted for the Codex, no other method is possible if one wants to add or delete articles.

When all this work is finished a printing Commission is nominated from amongst the members of the full Commission to supervise the work of printing. The printing and the right to sell the Codex are given to the publisher who offers the lowest sale price to the public, the Minister for Public Instruction inviting tenders for the contract, which is given to the publisher who undertakes to sell to the public at the lowest rate per sheet of sixteen pages, *recto et verso* (i.e., printed both sides). As the preface states, the Codex does not cost the State anything. The publisher (Masson) undertakes to set the book up entirely and to keep the type set until it is printed. Further, he has paid the State the sum of 45,000 francs, which has been used to pay the editors, being divided between them in proportion to their attendances at the Committee Meetings.

The full Commission met every seven or fourteen days, according to the importance of the work done by its members. In each Sub-Commission the work was divided amongst the members by the President. Each editor took charge of a certain number of monographs until the order to print was given. The method of working is very slow, and the revision of the Codex required eleven years. A new one would not have taken so long. Each of the members of the Sub-Commissions worked in his own laboratory and with his own personal resources: no money being provided for material, products, or work. The Sub-Commissions met at the Laboratory or house of the President.

A Supplement to the Codex will be published next year, and errors in the 1908 edition will be corrected.

PHARMACOPŒIA HELVETICA.

The methods of publication and revision of the Swiss Pharmacopœia are extremely interesting. The Swiss Apotheker Verein—i.e., Pharmacists' Association—appointed in 1897, in connection with the revision of the Pharmacopœia last published in 1893, a permanent Pharmacopœia Commission, which received a subvention from the Federal Council. Up to the end of 1902, when it was dissolved, the Commission had dealt with 115 monographs. At that time, however, by a decision of the Federal Council, an official Swiss Pharmacopœia Commission was appointed, with powers, it being divided into two sections—one a Pharmaceutical Section with seventeen members and thirteen assistants, and the other a Medical Section with ten members and nine assistants, the conduct of the business being placed in the hands of a Committee consisting of three directors selected by the General Council. The Commission was divided into the following Sub-Commissions:

1. Sub-Commission for crude drugs.
2. " " inorganic preparations.
3. " " organic preparations.
4. " " galenical preparations.
5. " " wines.
6. " " sera, etc.
7. " " tables of doses, etc.
8. " " chemical pharmaceutical tables.
9. " " editorial Commission.

In 1902 the monographs were distributed to the members of the Sub-Commissions, and the work of revision was proceeded with so rapidly that although much of the Pharmacopœia was remodelled the text was delivered to the Federal Council for approval in the beginning of 1907.

PHARMACOPŒIA AUSTRIACA.

The last edition of the Austrian Pharmacopœia, published in 1906, is one of which pharmacy may be justly proud. It was compiled by the Pharmaceutical Committee of the Supreme Sanitary Council, consisting of experts in the sciences involved, of pharmacists

appointed by the Head Association of Vienna, and of the Apotheker Verein of Vienna. In the first instance, on the instruction of the Imperial Ministry of the Interior, the Committee prepared everything necessary for the new edition by issuing a descriptive report giving the necessary guiding considerations.

Having agreed upon the principles, the Colleges and the Hospitals of Vienna, and also various clinical professors, were invited to express an opinion as to which medicines should be retained and what methods of preparation should be improved. The whole of the reports and opinions obtained from various parts of the Empire were arranged by the Supreme Sanitary Council and handed over to the Pharmaceutical Committee and a Pharmacopœia Commission in order that proper regard might be given to the requirements of the country.

PHARMACOPŒIA ESPANOLA.

Revision of the Spanish Pharmacopœia was entrusted by the Government to the Royal Academy of Medicine, Madrid, which appointed a Committee of eight of its members, half of whom were physicians and half pharmacists. The Spanish Pharmacopœia is enforced by a Royal Decree after submission to the Ministry.

THE PHARMACOPŒIA OF THE UNITED STATES.

Coming last of all to the United States, it may be said of this Pharmacopœia that it stands alone as a work elaborated by private associations without any mandate or authority from the Federal Government, and it is, as is well known, revised by a Committee consisting almost equally of members of the medical profession and the pharmaceutical calling. It is naturally regarded as an anomaly that this work should not be utilised as a legal standard for the enforcement of the Federal Pure Food and Drugs Act.

INCIDENCE OF PHARMACOPŒIAS ON BUSINESS.

Having reviewed the methods of compilation, revision, and publication of the more important Pharmacopœias, it is desirable to consider how far these works are of a legislative character, and how far the rules and regulations published in these Pharmacopœias affect the exercise of the pharmaceutical profession.

It must be conceded that the Statutes regulating pharmacy in many of these countries are much more stringent, and perhaps more irksome, than those regulating pharmacy in Great Britain and Ireland. Certain of the foreign Pharmacopœias indicate for each powerful drug maximum single and daily doses, which the pharmacist in dispensing any prescription may not overstep unless the prescriber has sanctioned the increased dose by a special sign. Moreover, they give instructions regarding the storage of pharmaceutical preparations and poisons, with indications as to those which must be kept protected from light or otherwise preserved. Other Pharmacopœias give a list of preparations which may not be sold outside pharmacy, and also of those which the pharmacist may not sell without the production of a medical man's prescription. In others also we find a list of official preparations, and even in some cases the minimum quantities, which must be stocked in every pharmacy, as well as apparatus and analytical requisites. The French and Italian Pharmacopœias even go so far as to include the laws and regulations bearing upon pharmacy and the punishments which may be meted out to those who do not obey them.

It must not be forgotten that in the United Kingdom the Pharmacopœia, although a standard to the prescriber and dispenser, is not an authority under the Sale of Food and Drugs Acts, although, as we shall hear probably in the discussion at the Practice Section of the Conference to-day, it is usually accepted in the absence of any other authority as the proof and standard. It will be remembered also that under the Pharmacy Act, 1868, the Pharmaceutical Society has power to enforce the dispensing of prescriptions in accordance with the formularies of the *British Pharmacopœia* as far as they apply. I am not aware, however, that any action has at any time been taken by the Pharmaceutical Society in that connection. I see no reason, however, why, even though the pharmaceutical

calling be recognised as on an equality with the medical profession in the compilation of the *Pharmacopœia*, any greater restrictions should be placed upon the conduct of the business of the pharmacist than there are to-day, for the work of the Pharmaceutical Society makes it evident that it has been active and most fair in safeguarding the interests of the public.

Having thus considered the position of the physician and pharmacist in revising, and the methods of publication of, the *British Pharmacopœia*, and the methods of revision and publication of the *Pharmacopœias* of the world, we come to a consideration of

THE PROBLEMS OF THE FUTURE.

There can be no question that the rights of the General Medical Council to publish the *British Pharmacopœia* can only be overruled by an Act of Parliament, and, as I have already stated, in my opinion the present is an opportune time for the promotion of a Bill for that purpose. It is not clear from reference to old records whether any compensation was given to the bodies which published the Dublin, Edinburgh, and London Pharmacopœias when their works were absorbed by the General Medical Council, but at any rate the copyright of the *Pharmacopœias* of 1864, 1867, 1885, the Addendum of 1890, and the *Pharmacopœia* of 1898, are vested in the General Medical Council. It has never been possible to ascertain what profits have been made by the General Medical Council out of the publication of the *British Pharmacopœia*—in fact, the accounts would appear to indicate that very little profit has been made; but one looks for a reason for the refusal of the General Medical Council to co-operate on an equality with the Pharmaceutical Society in the publication of the *Pharmacopœia*, and surely that can only be found in the fact that there must be certain profits obtainable from the publication of the work. When one considers that 45,000 copies of the *Pharmacopœia* of 1898 have been sold (and, by the way, probably three-quarters of them to those actively engaged in pharmacy) there should have been a very considerable profit if one takes into consideration the selling price of the *Pharmacopœia*, as compared, for the sake of argument, with the French Codex. The *British Pharmacopœia* is published at 10s. 6d., and consists of 535 pages, whilst the last edition of the French Codex was published at frs. 9.50 (8s.), and consists of 1,000 pages. If, therefore, no profit has been made from the publication of the *British Pharmacopœia*, then the work cannot have been carried out economically. One may surmise, nevertheless, that some profit has been made out of the *British Pharmacopœia*, and it is for that reason that the General Medical Council is loth to part with the right of publication.

It has been alleged that the General Medical Council has no power to elect members of the Pharmaceutical Society or nominate members of the Pharmaceutical Society on the Pharmacopœia Committee, so that the Committee of Reference in Pharmacy holds a subordinate position. Reference to the Medical Act of 1858 and the subsequent Act of 1862 does not confirm this statement. The only duty placed upon the Council by Statute is that of producing the *Pharmacopœia* under its supervision and authority. There are no regulations as to who shall help, or the position of authority or otherwise that shall be given to those who do help. Moreover, pharmacists were on the first British Pharmacopœia Committees, Mr. Peter Squire being associated with the London one and Mr. James Robertson on the Edinburgh one.

The question, therefore, that arises at the present time is, how the position can be best attacked, and how the pharmacist may secure the position in the making of a *Pharmacopœia* such as our *confrères* in every other country have. It has been suggested that it might be possible, now that the State has recognised both departments of medicine, that the Government might introduce a measure dealing with the subject, but our Government at the present time has its hands full of promised legislation, and from a Parliamentary point of view perhaps the position is not opportune. I would

suggest, therefore, that the Pharmaceutical Society give its most earnest and careful consideration to a Bill on the lines of that which I shall refer to shortly, and having considered it in all its bearings, submit it with a petition to the Privy Council, in the hope that the Privy Council may see fit to introduce such a Bill into Parliament. On consideration of the whole subject, and the history as set out in the remarks that I have made, one would imagine that that Authoritative Body would see the fairness of the step that is proposed, and further would attempt to bring the positions of medicine and pharmacy in this country into line with those of other countries. Failing that, however, there would be no objection whatever—in fact, it would be advisable—that the Bill should be introduced into Parliament by the Parliamentary Secretary of the Pharmaceutical Society, into whose hands I am confident it could be safely entrusted.

It must be distinctly understood that if, under the Sale of Food and Drugs Acts, the Pharmacopœia is to be made the standard, then the revision of the work must be done with that purpose in mind, and it will of necessity be on somewhat different lines from those which have been adopted in the revision of the Pharmacopœia so shortly to be published.

In the new Pharmacopœia items that have hitherto appeared in the Indian and Colonial Addendum will be included in the body of the work, and in that way the work will be given a more Imperial character than has hitherto been the case.

Whilst under the sale of Food and Drugs Acts in this country no standard has been deliberately recognised, in certain of our Colonies the *British Pharmacopœia* has been accepted as a standard, and I have thought it well therefore that in drafting a Bill which should cover the important problems of revision of the Pharmacopœia for the future, it should be on the lines of an Imperial Pharmacopœia, in which there should be representations not only of Medicine and Pharmacy in the Mother Country, but also in India and the Colonies. I refer to the text of the Bill, which in my humble opinion fairly represents the accurate positions of the medical profession and the pharmacist, and I trust that it will receive the most earnest consideration, first of all of our pharmaceutical advisers, and subsequently of the Members of the Privy Council.

Proposed Pharmacopœia Bill.

An Act to provide for the publication of a BRITISH IMPERIAL PHARMACOPŒIA, and for the periodical revision of the same.

Be it enacted by the King's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled, and by the authority of the same as follows:

I. (1) There shall be constituted for the purposes of this Act a Commission to be called "The British Imperial Pharmacopœia Commission," consisting of the following members:

Six duly qualified Medical Practitioners, two of whom shall have had personal experience of general practice, to be nominated by the General Medical Council.

The Professor of Pharmaceutics in the School of Pharmacy of the Pharmaceutical Society of Great Britain.

Three Registered Pharmacists, one of whom shall have had practical experience in the wholesale commerce of drugs and in the manufacture of pharmaceutical preparations on a large scale, to be nominated by the Council of the Pharmaceutical Society of Great Britain.

Two Registered Pharmacists, to be nominated by the Council of the Pharmaceutical Society of Ireland.

One duly qualified Medical Practitioner, who shall have had personal experience of medical practice in the Indian Empire, to be nominated by the Secretary of State for India.

One Registered Pharmacist, who shall have had personal experience of pharmaceutical practice in the Empire of India, to be nominated by the Secretary of State for India.

One duly qualified Medical Practitioner, who shall have had personal experience of medical practice in a British Colony, to be nominated by the Secretary of State for the Colonies.

One Registered Pharmacist, who shall have had personal experience of pharmaceutical practice in a British Colony, to be nominated by the Secretary of State for the Colonies.

The Chief Government Chemist.

One Analytical Chemist, who shall have held an appointment as Public Analyst to a County or Borough Authority for not less than ten years, to be nominated by the Council of the Institute of Chemistry of Great Britain and Ireland.

A Barrister-at-law of not less than five years' standing, to be nominated by the Treasury.

Such nominations shall be submitted to the Privy Council, by whom they shall be formally approved and gazetted. In the event of any vacancy occurring in the constitution of the Council the body which nominated such members shall nominate another person as defined herein to succeed to the vacancy, subject to the approval of the Privy Council as aforesaid.

(2) The Commissioners shall appoint from their own number a person to act as their Chairman, and may appoint such officers and servants (including physicians, surgeons, pharmacists, analytical chemists, and any other persons specially qualified to conduct researches into the constitution and uses of drugs and other medicinal agents, and in elaborating processes for the manufacture and testing of drugs and other medicinal agents, so far as the compilation and revision of the British Imperial Pharmacopœia is concerned) as the Commissioners, subject to the approval of the Treasury as to number, may determine, and there shall be paid out of moneys provided by Parliament to the Commissioners, and to such officers and servants, such salaries or remuneration as the Treasury may determine, and any expenses incurred by the Treasury or the Commissioners in carrying this Act into effect, to such extent as the Treasury may sanction, shall be defrayed out of moneys provided by Parliament.

II. The Commission shall prepare and cause to be published a book containing a list of medicines and compounds and the manner of preparing them, together with the true weights and measures by which they are to be prepared, and mixed, and containing such other matters and things relating thereto as the Commission shall think fit, to be called "The British Imperial Pharmacopœia," and the Commission shall cause such Pharmacopœia to be altered, amended, and republished periodically as hereinafter provided.

III. The exclusive right of publishing, printing, and selling the said Pharmacopœia shall vest in the Commission, subject to the proviso that it shall be lawful for the Treasury from time to time to fix the price at which copies of the said work are to be sold to the public.

IV. Section 54 of the Medical Act, 1858 (21 and 22 Victoria, C. 90), and Sections 2 and 3 of the Medical Act, 1862 (25 and 26 Victoria, C. 91), are hereby repealed as from the date of the publication of the British Imperial Pharmacopœia.

V. All questions as to the inclusion in the British Imperial Pharmacopœia of any drug, chemical or medicinal preparation, shall be determined by those members of the Commission who are duly qualified medical practitioners, alone, and all other matters relating to the Pharmacopœia shall be determined by the Commission as a whole.

VI. The standards of purity and strength prescribed in the text of the British Imperial Pharmacopœia shall apply only to substances which are professedly bought, sold, or dispensed for medicinal purposes.

VII. Any drug, chemical, or preparation sold for medicinal purposes, under or by a name recognised in the British Imperial Pharmacopœia, which fails to correspond to the standard of strength, quality, or purity laid down or as determined by the tests laid down in the British Imperial Pharmacopœia, shall be deemed not to be of the nature, substance, or quality demanded by the purchaser, unless the fact that it does not or may not correspond to the standard of the Pharmacopœia be plainly stated upon the bottle, box, vessel, or wrapper in which it is contained, and unless the seller can prove to the satisfaction of a judicial authority that the standards of the Pharmacopœia for the substance in question are not such as can be reasonably applied to such substance, or that the tests laid down in the Pharmacopœia are not such as to give accurate results and information, or are not suitable for the substance in question.

VIII. (1) Before the British Imperial Pharmacopœia shall be published the Commission shall publish, in such manner as they may think best adapted for informing persons affected, notice of the proposal to publish the Pharmacopœia, and of the place or places where draft copies of the Pharmacopœia may be obtained, and of the time, which shall not be less than three calendar months, within which any objection made with respect to the draft Pharmacopœia, by or on behalf of persons affected, must be sent to the Commission.

(2) Every objection must be in writing, and must state:

(a) The portion or portions of the draft Pharmacopœia objected to.

(b) The specific grounds of objection, and

(c) The omissions, additions, or modifications asked for.

(3) The Commission shall consider any objection made by or on behalf of any person appearing to them to be affected which is sent to them within the required time, and they may, if they think fit, amend the draft Pharmacopœia in order to meet such objection.

IX. When six calendar months have elapsed after the publication of the British Imperial Pharmacopœia in its finally approved form, the said Pharmacopœia shall for all purposes be deemed to be substituted for the British Pharmacopœia, and any Act of Parliament, Order in Council, or Custom relating to the British Pharmacopœia shall be deemed, after the publication of the British Imperial Pharmacopœia, to refer to the British Imperial Pharmacopœia. Notice in the London, Edinburgh, and Dublin Gazettes to the effect that the British Imperial Pharmacopœia has been published shall be deemed sufficient evidence of its publication for the purposes of this Act, and a copy of the said Pharmacopœia printed by such person as may be named in the said notice or in any other notice published in the said Gazettes, as authorised by the British Imperial Pharmacopœia Commission to print the said Pharmacopœia, shall be admitted in evidence as being the Pharmacopœia directed to be published by this Act.

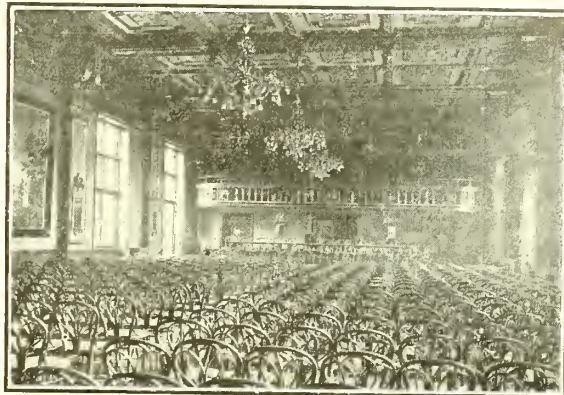
X. The Commission shall cause the British Imperial Pharmacopœia to be revised regularly, and shall at intervals, not exceeding twelve calendar months, publish reports embodying any proposed alterations in, additions to, or withdrawals from the said Pharmacopœia, and such reports shall be published in draft, and may be objected to in the manner hereinbefore provided, but after they have been finally approved as hereinbefore provided they shall have the full force and authority of the British Imperial Pharmacopœia, until superseded by a later report or a new edition of the said Pharmacopœia.

XI. The Commission may issue special supplements to the British Imperial Pharmacopœia dealing with the requirements of the Empire of India, or of any British Colony, as they may deem fit, and for that purpose may obtain the co-operation of persons having special knowledge of such local requirements.

XII. The new editions of the British Imperial Pharmacopœia shall be published at regular intervals not exceeding ten years.

XIII. This Act may be cited as the British Imperial Pharmacopœia Act.

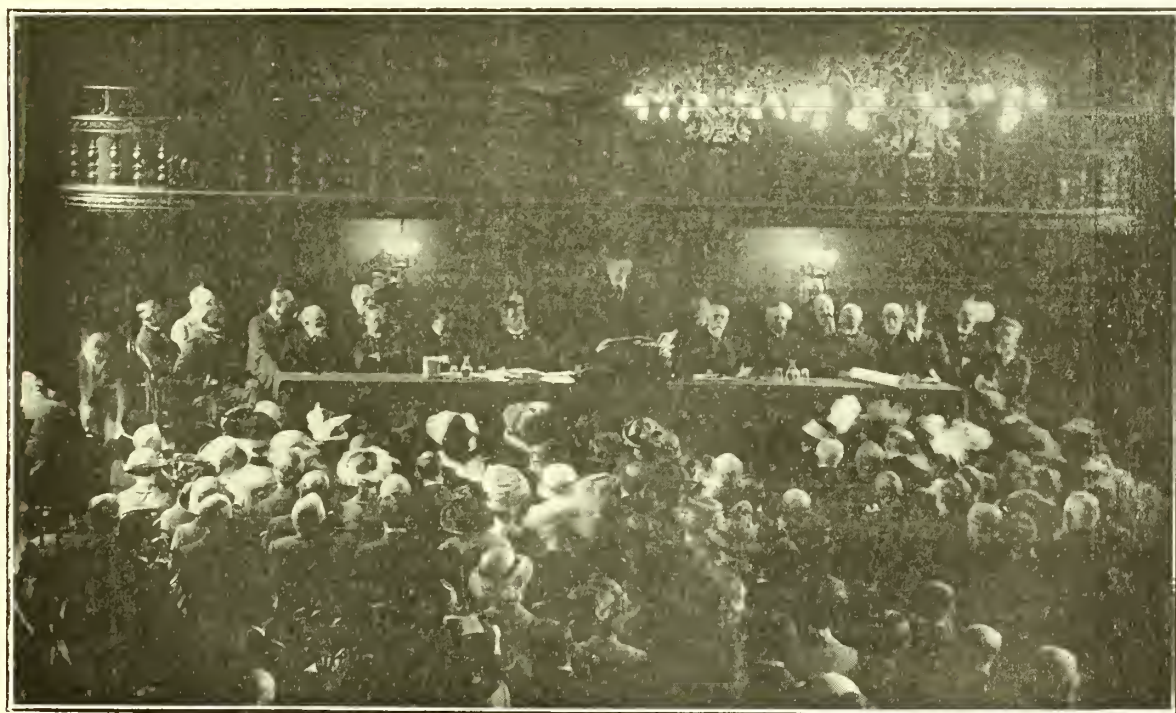
LADIES AND GENTLEMEN,—We who are gathered here to-day represent not merely the Pharmacy of these Islands of the Sea, but Pharmacists of the British



THE THRONE ROOM.

This photograph was taken by Mr. J. Cleworth on Monday. It shows the room prepared for the meeting.

Empire, and I have felt that in celebration of the Jubilee of this Imperial Body, no subject can be more appropriate than the exposition of our interests in the *British Pharmacopœia*, that link which binds all of us, North and South, the Orient and the Occident. I trust that this Conference shall not have gone many years in its second half-century before the reformation which I advocate comes into being as an actuality.



THE PRESIDENT READING HIS ADDRESS.

From a non-flashlight photograph taken by Mr. J. Cleworth.
The names of those on the platform are given in the report on the next page.

British Pharmaceutical Conference

Jubilee Meeting

London, July 21-24.

DOLEFUL portents, occasioned by the wet weather with which the morning opened, were in the air on Tuesday morning, when members of the British Pharmaceutical Conference began to assemble at the Holborn Restaurant. The Local Committee were up betimes, and the organisation was such that even the earliest arrivals had no difficulty in obtaining directions of any kind. The Throne Room, easy of access from the street, is one of the handsome meeting-places which cluster round the King's Hall, and is an ideal room for the Conference sessions. There are small galleries at each end of the room. Before ten o'clock the greater part of the seating accommodation was taken up, the large number of ladies present being particularly noticeable.

Shortly after ten o'clock the President, Mr. J. C. Umney, took his place on the platform. He was supported on the right by the two Secretaries (Mr. Horace Finnemore and Mr. R. R. Bennett), Mr. W. A. H. Naylor, Mr. T. H. W. Idris, and Mr. C. Umney. On the President's left were Mr. S. R. Atkins, Mr. N. H. Martin, Sir Edward Evans, Sir William Baxter (President of the Pharmaceutical Society of Ireland), Mr. D. Lloyd Howard (Treasurer), and Mr. Edmund White (President of the Pharmaceutical Society of Great Britain). There were also on the platform Mr. E. Saville Peck, Mr. W. C. van Gorcum (Rotterdam), Mr. J. P. Gilmour, Mr. Thos. Stephenson, Mr. G. C. Druce, Mr. Francis Ransom, Mr. W. F. Wells, Dr. J. F. Suyver (Amsterdam), Mr. E. M. Holmes, and Professor P. van der Wielen (Amsterdam).

THE OFFICIAL WELCOME.

The PRESIDENT, who on rising was cordially applauded, expressed regret that the Conference was a little late in starting, and called upon Mr. Edmund White, President of the Pharmaceutical Society of Great Britain and Chairman of the Local Committee, to open the proceedings.

Mr. EDMUND WHITE, B.Sc. (Lond.), who had also a most hearty reception, said: It is my very pleasant duty, on behalf of the Local Committee, to give the British Pharmaceutical Conference a very hearty welcome to London. It is only thirteen years since the Conference was here before, and I believe many of you will have very pleasant recollections of the last occasion. ("Hear, hear," and applause.) To-day we not only have another visit from the Conference, but we have it celebrating its Jubilee in London—(applause)—and I can assure you that the Local Committee have borne this in mind, and have done their very best to make the visit worthy of the occasion.

The PRESIDENT: Well, Mr. Chairman of the Local Committee and President of the Pharmaceutical Society—two rôles in one, which we did not know of when you were appointed to the first—we were obliged to you for the kind invitation to come to London, and we now thank you for your very kind reception, an earnest of which we experienced last night, when we met at the Guildhall. (Applause.)

CONGRATULATIONS.

The President then called upon Mr. Finnemore, the Senior Secretary, to read the letters of apology for absence.

Mr. FINNEMORE said that before he did that he desired to read some letters and telegrams of good wishes and congratulations which have been sent to the Conference. The first, from Berne, is as follows:

"Professor Tschirch, Hon. Member of the British Pharmaceutical Conference, sends to the Honourable British Pharmaceutical Conference, the centre and focus of scientific pharmacy of England, the best wishes for further growth and prosperity."

The next is a telegram from Mr. Haazen, of La Nationale Pharmaceutique, Belge, which reads:

"Receive congratulations for the fiftieth anniversary of your Society and good wishes for the members."

Dr. Thoms, in the name of the German Pharmaceutical Society, sent "sincere and hearty good wishes to the Jubilee Meeting of the Respected British Pharmaceutical Conference." The President of the Midland Pharmaceutical Association also telegraphed congratulations.

LETTERS OF APOLOGY.

Mr. Finnemore then read letters of apology received from Mr. G. J. Mackay, Brisbane, President of the Pharmaceutical Society of Queensland; Mr. T. H. Maiden, Director of the Botanic Gardens of Sydney; Professor L. van Italie, Pharmaceutisch Laboratorium der Rijks-Universiteit, Leyden, who wrote:

"I am very sorry I cannot assist to the Jubilee meeting of the British Pharmaceutical Conference, as was my intention before. It would have been a great pleasure for me to meet you and other prominent British pharmacists at the meeting, but I have to accompany my family to Germany, and I must be back at Leyden at an early time for the preparation of Congresses to which I am connected. I thank you a second time for the invitation to assist at your meeting, and I wish you a brilliant success."

Dr. J. J. Hofman, The Hague, who wrote:

"It is with veritable regret that I must acquaint you with the fact of my being unable to respond to your kind invitation to attend your Conference. Family circumstances—viz., the severe illness of my brother-in-law—make it impossible for me to leave home even for a day. I must therefore reluctantly leave the honourable task of representing our Society at your fiftieth Conference to my fellow-delegates, Messrs. Suyver and Van Gorcum, who will doubtless give expression to the wishes we are forming here for the continual prosperity of your Society and its members."

Mr. John H. H. Jury, Bowmanville, Ont., President of the Canadian Pharmaceutical Association, who wrote:

"It would be a very great pleasure indeed to me if circumstances permitted me to be present on that occasion, not only on account of the loyalty of all true Canadians to the Mother-land and her institutions, but because I feel that the time has come when closer relationship should exist between Canadian pharmacy and British pharmacy."

Dr. W. H. Wiley, President of the United States Pharmacopœial Convention, wrote:

"I appreciate most cordially the honour of the invitation, both personally and on behalf of the Pharmaceutical Convention of the United States, which is practically interested in the same subjects which you are considering. It is, however, with regret that I am compelled to decline your invitation, as I find that it will not be possible for me to be absent from this country at that time. Were I able to attend, it would be a great pleasure for me to prepare a paper on some subject connected with pharmaceutical work in harmony with your request."

Mr. W. B. Day, President of the American Pharmaceutical Association, wrote:

"It would give me great pleasure to be present at this meeting, and to greet personally my British colleagues, but since I am unable to attend, I take this opportunity of extending to you the cordial greetings of the American Pharmaceutical Association, and of expressing the hope that your Jubilee meeting may be successful beyond your fondest hopes. The Conference is doing splendid work, as an evidence of which your published 'Year-books' are sufficient. The American Pharmaceutical Association is in sympathy with you, and is competing with you in the most friendly way in the advancement of pharmacy and pharmaceutical knowledge among English-speaking pharmacists."

Professor Dr. Kiliani, Berlin, wrote:

"Thank you very much for the friendly invitation to the Jubilee meeting of the British Pharmaceutical Conference. To my intense regret, I must inform you that it is impossible for me to leave Freiburg at that time on account of my official duties. The medical examinations begin then, and at these I take an essential part."

Other letters of apology for absence were received from Messrs. R. S. Bliss, H. Garnett, R. Glode Guyer, W. Hills, C. A. Johnstone, G. Lunan, W. Ransom, C. I. Russell, and R. Wright.

DELEGATES.

The Secretary added that there were present delegates and visitors from the Continent and the British Overseas Dominions. The Society of Pharmacy of Paris is represented by M. Fournau, the University of Amsterdam by Professor Van der Wielen, the Pharmaceutical Society of the Netherlands by Mr. W. C. van Gorcum and Dr. J. F. Suyver, the Pharmaceutical Society of Australasia by Mr. Victor Say, Mr. T. P. Isaac, and Mr. R. P. Francis, the Pharmaceutical Society of South Australia by Mr. J. W. Clayton, and the Natal Pharmaceutical Society by Mr. G. A. Champion and Mr. J. W. Cooper.

Sir W. J. Baxter at this stage said that although it is only a narrow strip of sea that divides this happy land from Ireland he wished to say that it gave him not only great pleasure to be able to attend the Jubilee Conference, which might be fitly called an international one. He brought from the Pharmaceutical Society of Ireland, which he had the honour to represent, their warmest greeting and congratulations to all on this memorable occasion, and their heartiest wishes for its success—a success which is already assured in having a president so highly esteemed as Mr. Umney.

The Senior Secretary then read the list of the delegates from:

The Pharmaceutical Society of Great Britain, the Pharmaceutical Society of Ireland, the Women Pharmacists' Association, the Chemists' Assistants' Association, School of Pharmacy Past Students' Association, and Aberdeen, Aberdeenshire W., Bradford, Bolton, Cambridge, Chester, Dewsbury, Doncaster, Dover, Edinburgh (Assistants'), Edinburgh (Trade), Exeter, Essex, Hants, Huddersfield, Lanark (Mid), Leicester, Liverpool, London Co., London N., London S.E., Manchester, Middlesex, Midland, Newcastle, Nottingham, Oxford, Plymouth, Portsmouth, Sheffield, Shropshire, Southampton, Bradford, Wharfedale, and Staffs (N.) Pharmacists' Associations.

The PRESIDENT: You have heard the list of delegates, and I now ask you to give them a very hearty welcome. (Loud applause.)

Dr. J. F. SUYVER, who was enthusiastically welcomed, and who spoke in English, expressed the happiness he felt in being present and in bringing the Conference the cordial greetings and congratulations of the members of the Pharmaceutical Society of the Netherlands. His sincere hope was that he and his colleague would have a pleasant time in their company. (Applause.)

Professor VAN DER WIELEN, in acknowledging the welcome accorded him, said he would have the opportunity later on of addressing the Conference on another subject. Meantime he assured them of the delight he felt in being present and in having the opportunity of assisting at the Conference.

THE PRESIDENT'S ADDRESS.

It was now 10.20, and the PRESIDENT on rising intimated that printed copies of his Address would

be available, and he therefore proposed to contract it as far as possible. The abstract occupied about twenty minutes in delivery. The Address is printed on pages 156 to 165.

THANKS TO PRESIDENT.

Mr. S. R. ATKINS (Salisbury), who sat on the left of the President, rose, at the conclusion of the Address, and the ovation he received afforded eloquent evidence of the kindly remembrance in which he is ever held by pharmacists. He began, "Ladies and gentlemen," turned to Mr. Umney, called him "President," and then to Mr. White, addressing him also as "President." Then he went on: I say President, President, because there are two kings in Brentford. I have a great pleasure and a great honour conferred upon me of being asked to propose that the very best thanks that we are capable of awarding should be given to the President for his admirable Address to-day. I am not going to presume to criticise, or to offer any suggestions upon what I think is a great Jubilee Address ("Hear, hear," and applause.) It is worthy of remembrance that this is our Jubilee, and is not an ordinary occurrence. (Hear, hear.) And when I see this large and attractive—(looking with a smile to the ladies, laughter ensuing)—when I see the number that is represented to-day, when I reflect upon the vaster numbers represented by those whom you represent, I say it is a Jubilee occasion. (Applause.) What that means, what that entails, I won't presume to say, except that it ought to be a great jubilatory occasion—an occasion for the expression of the deep emotion of our hearts that we have reached the fiftieth year of the existence of the Conference. With regard to that long period which unhappily I was not present at, much to my regret—I was in another part of the world at the time—just think of the men who were associated with us in early days. Who were those "Ancient Lights"? Ancient lights have stood in the way of progress, but these—our—Ancient Lights were the fathers of progress. ("Hear, hear," and loud applause.) I will only just give you a few of their names. There were: Attfield, Brady, Deane, Hanbury, Stoddart, Groves—my old friend Tom Groves—Schacht (one of the most intellectual men we have ever had amongst us), and Reynolds, whose life was full of grace and gracious deeds. (Loud applause.) I mention these names only as they occur to me.

Now, in regard to the President's Address, portions of which have been read to us, I can only commend to you the ancient formula, which is a somewhat ecclesiastical one—"Read, mark, learn, and inwardly digest." (Applause.) With regard to the President himself, I do want to be permitted, even in his presence, to say one or two words of very earnest, hearty congratulations that we have him as our Jubilee President. (Loud applause.) You know, we often hear in these days of the well-known formula that when men rise well it is owing to heredity and environment. Very likely—they are two very powerful factors in the building of a career. Some of us may have been deficient in the enjoyment of them, but, this notwithstanding, we agree that they are undoubtedly important factors in the development of character and in the attainment of success in life. How many great men have arisen in this world who have had none of them! (Hear, hear.) Take Thorwaldsen, the great Danish sculptor. He was the son of a ship's carpenter in Copenhagen, and passed on to success by his own wonderful energy and capacity until he became, as I think, one of the greatest sculptors of the world. Those of you who know the Thorwaldsen Museum in Copenhagen know that I am not exaggerating when I say that. (Applause.) Then, again, there is Abraham Lincoln—possibly one of the best Presidents that the United States ever had. And what was he in his tender youth? Only a canal boy; but he became President of America. So I might go on. But all that is not to the point. I want to say that we have in our President a man of whom we are justly proud. (Loud applause.) And we are also thankful that we have him this year—the Jubilee year. (Hear, hear.) I won't venture

to say more now, although I feel so many things pressing upon my heart and my brain, if I could express them, but I feel that the ladies are thinking about the after operations of this morning. I will therefore up and move at once that the very best thanks of this Conference, representing as it does the whole world of pharmacy, not only Great Britain and Ireland, not only our Indian Empire, the Colonies, and the other Dominions beyond the Seas, but the whole world practically on which the sun, or a good portion of it, never sets. Pharmacy in all parts of the globe is represented by the gathering we have to-day. We are glad to think that this Conference is now defining, aiming at, the inclusion of the whole British Empire in its representation in pharmaceutical matters. (Loud applause.) And now I ask you to join with me in according to our President our hearty, cordial, enthusiastic thanks for his presence and for the Address he has given us. (Loud applause.)

Mr. N. H. MARTIN (Newcastle), supporting, said that although he was surrounded by men who, perhaps, had a greater claim than he had to the honour and privilege of seconding this vote of thanks, he had to thank the Executive Committee for giving him the opportunity of doing so, as he would be unable to remain for the rest of the meeting. After the eloquent manner in which their friend—their veteran friend, although he looks so young

(applause)—had presented the vote, very few words were necessary to commend it. But, having given some attention to Pharmacopœia-making, he desired to express a few words which occurred to him on the subject. His first impression of the Address had been one of disappointment that it had not taken the form of an historical review of the Conference. He hoped some day the President would review the fifty years in a Paper for presentation elsewhere. (Applause.) Mr. Martin went on to say that it was his own Jubilee in pharmacy, or, as he preferred to call it, his golden wedding to pharmacy. (Applause.) Pharmacy has been to him a great happiness every day he has practised it, and he hoped in the future still to derive from pharmacy his chief joys and charms. (Applause.) Continuing, he said he was an assistant to the first President of the Conference for over five years, and he joined the Conference during that time. They could imagine, therefore, how entwined the Conference is with the tendrils of his heart, and how affectionately he considered it. (Applause.) With regard to the Pharmacopœia Committee, the President had given an excellent *précis* of what has been done and what is required. The whole of that Address will repay careful perusal. He had mentioned that the General Medical Council had sought and obtained some of the best pharmaceutical assistance that they could obtain. He (the speaker) was one of those who took part in the controversy with regard to the appointment of the three professors as editors, and he held that the General Medical Council were mistaken in thinking they had the concentrated wisdom of pharmacy in the persons of the three professors. Then in regard to the Committee which assisted the G.M.C. The President's father would bear him out that the work of that Committee was greatly hampered by the treatment that the members had from the medical profession. The Committee's work, which had cost weeks of experimenting and weeks of labour, was rendered useless because the G.M.C. did not adopt the same views. It would have been an enormous advantage, and will be in the future, when, as we hope by the boldness of the President, we obtain it, the pharmacist will be an integral part of the Committee. It will also be to the advantage of the Pharmacopœia. (Applause.) As to the Draft Bill, he said there are difficulties in the compilation of the Imperial Pharmacopœia, but there is not the slightest reason why the Colonies should not adopt the British Pharmacopœia. We might go one step further. Mr. Martin read an extract from a letter of Professor Rummington, in which he said: "The English-speaking people should have Pharmacopœias largely, as far as possible, in accord." There are strong reasons for bringing this about, because more people, probably,

travel between Great Britain and the American Continent than used to travel fifty years ago between London and Newcastle. If a man has a prescription given him in London, he can have it dispensed in New York or Ottawa within a week. (Applause.)

Mr. CHARLES UMNEY, who followed, said that having filled the presidential chair at Newcastle in 1889 and subsequently at Leeds, he was well aware that it is outside the rules that speakers should comment on the contents of the President's Address. But as an old pharmacist, a practical pharmacist, and as an old Pharmacopœia-maker, he thought he was qualified to speak on most of the points upon which it bears. He claimed that there was not a man in the room who has dabbled in Pharmacopœia-making for a longer period than he had. He had dabbled in pharmacy, and in the manufacture of pharmaceutical preparations since the year 1863, and had had the great fortune to be with John Bell & Co. His good friend Hyde Hills told him that he might expect daily or even hourly Sir Alfred B. Garrod, who was acting for the Medical Council in making the B.P., which was being made from the Pharmacopœias of London, Edinburgh, and Dublin. At that time, either directly or indirectly, he dabbled in Pharmacopœia-making by giving persons information which they did not possess. The last occasion on which he worked on a Pharmacopœia was on the Committee of the 1898 Pharmacopœia, and the President, as his junior, gave a great deal of help in their research laboratory. Now that recent legislation has recognised the pharmacist, he saw no good reason why pharmacists should not be recognised in the making of the Pharmacopœia, nor why an Act of Parliament devised for that purpose, as now laid down by the President, should not be passed. (Applause.) Concluding, Mr. Umney said: "If the matter is left in the President's hands, and if you will all back him up in the attitude he takes, I am sure that within a very few years we shall find the pharmacist recognised by legislation as he should be in the direction indicated." (Applause.)

Mr. ATKINS, in putting the resolution of thanks, said he hoped they would not think that he undervalued heredity, nor the advantages of environment. His friend the President not only came from such excellent stock, but he was educated in London, was brought up in London—in this hub of the universe. If he is not a brilliant man who can be? (Laughter and applause.) He has no side, for he is an all-round man," which sally caused roars of laughter from all. The resolution was put and carried with applause.

The PRESIDENT briefly replied, and thanked those who had spoken for the complimentary remarks they had made.

At this stage the ladies withdrew.

Report of the Executive.

The report of the Executive Committee was then read by Mr. Finnemore. It was as follows:

In presenting its annual report, the Executive Committee feels that it is most appropriate that the third visit of the British Pharmaceutical Conference to London should coincide with its Jubilee, and at the outset it would express its appreciation of the efforts of the Local Committee of the Pharmacists of the Metropolis who have devoted time and energy ill-spared from other exacting demands in perfecting the very complete arrangements that have been made for the comfort and enjoyment of the visitors to the Annual Meeting.

The Executive reviews with some satisfaction the progress that has been made in fulfilling the objects for which the Conference was established in 1863. On the social side there is no doubt of the benefit to the members of the craft of the opportunity thus afforded of meeting periodically; while with regard to the scientific work, over 1,100 papers and notes have been contributed to its Scientific Sessions. These may be roughly grouped into (a) those dealing with an extension of our knowledge of the chemistry of drugs, and (b) those designed to improve pharmaceutical preparations. In both cases this knowledge has had direct beneficial bearing upon the quality of drugs and hence upon the prestige of the craft.

The Executive felt that an attempt should be made to celebrate this unique occasion; it has therefore invited all the honorary members, as well as distinguished Continental

pharmacists and pharmacists from the British Overseas Dominions, to participate in the present meeting.

All these have expressed in felicitous terms their pleasure on receiving the invitation, and those who have been compelled to decline have done so with evident regret.

Representatives are present from France, Holland, and from the Pharmaceutical Societies of South Australia, New South Wales, and South Africa, and scientific contributions have been received from Germany and Holland.

The Executive Committee cannot refrain from expressing its deep sense of sympathy with those responsible for the conduct of pharmaceutical affairs during the past year. Pharmacy has passed through a period of anxious suspense probably never exceeded in its history, and congratulations are due to members of the craft on their first recognition by the State as the proper persons to act as dispensers of medicine.

The Executive desires to extend its warmest congratulations to Mr. Edmund White, a former Hon. Secretary of the Conference, on his election as President of the Pharmaceutical Society of Great Britain.

On the recommendation of the Practice Section Sub-Committee, consisting of the President, Messrs. F. W. Gamble, E. F. Harrison, E. T. Neathercoat, E. S. Peck, and the Secretaries, the Executive has decided that at the meeting of this Section on Tuesday, July 22, a discussion will be held on "The Operation of the Food and Drugs Act."

The Research Sub-Committee (consisting of the President, Messrs. F. W. Gamble, E. F. Harrison, C. A. Hill, E. M. Holmes, F. Ransom, and the Secretaries) was reappointed last October, and proceeded to revise the Research List.

It was recognised that membership of the Conference includes both those who have the opportunity of conducting research and also many who meet with practical difficulties, but whose opportunities do not readily lend themselves to research work. An attempt was therefore made to connect these two sections. Invitations were addressed through the journals to the general body of the craft, and also directly to many large manufacturing houses who it was thought might assist. Considering this was a new experiment, the Sub-Committee was gratified to receive so much help.

In addition, an attempt was made to co-operate with the Research Committee of the British Medical Association. The mutual assistance of medical and pharmaceutical workers might produce very valuable results in perfecting medical treatment. Unfortunately, partly owing to the troubled state of medical politics, the scheme has been rather slow in maturing, but the Executive notes with satisfaction that the Medical Committee is now drawing up a list of subjects requiring investigation; these will receive careful consideration.

Mr. R. A. Robinson, one of the Auditors, has resigned. The Executive desires to thank him for his services in this capacity during the last two years.

Following up the suggestion made in Sir Edward Evans's Presidential Address at the Edinburgh meeting last year, the following members of the Conference were asked to give evidence before the Dominions Royal Commission on the Cultivation of Drugs: The President (Mr. J. C. Unney), Messrs. K. C. Allen, J. H. E. Evans, E. M. Holmes, F. Ransom, and Professor H. G. Greenish.

In connection with the present meeting the Executive has addressed a letter of invitation to every registered pharmacist in the London area, and notes with satisfaction an accession of over two hundred new members, chiefly derived from this area.

The Executive learns with much pleasure that an invitation to visit Chester in 1914 will be proffered at the present meeting, also that the pharmacists of Scarborough wish to honour the Conference similarly in 1915. The Executive welcomes these signs of the continued popularity of the Conference, and the desire of pharmacists in such varied localities to extend hospitality to their fellow-members.

Mr. DRUCE, in proposing the adoption of the report, described it as covering a very wide ground, and as eminently satisfactory in all its points.

Mr. RANSOM, in seconding, said that it was seldom a more satisfactory report had been read than the one submitted. It was gratifying that there was such a great adhesion of new members, and his sincere hope was that the Conference would long retain them. On previous occasions many new members had joined, but the regret was that so many of them dropped off annually.

The report was then unanimously adopted.

FINANCIAL REPORT.

The HON. TREASURER (Mr. D. Lloyd Howard) then submitted the financial report for the past year (see *C. & D.*, February 22, index folio 288). He said that

with regard to the accounts for 1912 there is not much to add to the circular which was sent with the accounts, except that it may be of interest to note that 169 subscriptions were of sums over the Conference minimum of 7s. 6d., ranging from 8s. to 1l. 1s. It is to be hoped that as many members as possible will follow the good example of their 169 colleagues. Up to the 16th the subscriptions received amounted to 315l., as against 320l. for the corresponding period of last year. A disquieting feature of the position is that no fewer than 450 members have not yet paid their subscriptions, as compared with 180 last year. It is desirable that those who have not paid should do so as soon as possible, because this is of great assistance in enabling the Committee to ascertain how many copies of the "Year-book" will be required. (Applause.)

SIR EDWARD EVANS proposed the adoption of the accounts. He remarked that after the magnificent Address given by the President, members would say that they received full value for the small subscription it was necessary to pay in order to remain connected with the Conference. Many did not fully realise the good work being done at the present time by the assistance of the Committee of the Conference. (Applause.)

Mr. T. W. H. IDRIS seconded, and it was unanimously adopted.

SCIENCE SECTION.

First Session.

THE PAPERS.

By the time the foregoing business had been gone through, and the ladies had "run away," as the President put it, it was five minutes to twelve, when the first paper was taken. It was on the

Standardisation of "Normal Opium."

By P. VAN DER WIELEN.

THE author first pointed out that the chemical standardisation of drugs and galenicals is based on the determination of one of the active principles or of some of the active principles together, illustrating this by reference to cinchona, nux vomica, ipecacuanha, pomegranate-bark, and hydrastis. He added that opposition to the evaluation of opium only by the amount of morphine therein is not restricted to the present day. Dr. Andrew Ure communicated in 1830 "Observations on Opium and its Tests" to the "Quarterly Journal of Science, Literature, and Art" (1830, I., pp. 56-63). In this Ure mentioned that after giving notable quantities of morphine and also of narcotine to dogs no deadly effects were produced. If he gave opium of an equivalent quantity, this dose soon proved to be fatal. He also said:

"Oil seems to be the most potent menstruum of narcotine; for three grains dissolved in oil readily kill a dog, whether the dose be introduced into the stomach or in the jugular vein. . . . Since a bland oil seems to develop the peculiar force of narcotine, and since opium affords to ether, and also to ammonia, an unctuous or fatty matter, and a resin (the caoutchouc of Bucholz) to absolute alcohol, we are entitled to infer that the activity of opium is due to its state of composition—to the union of an oleate or margarate of narcotine with morphia."

Ure stated after this communication that "the meconic acid associated with the salifiable base has no narcotic power by itself, but may probably promote the activity of the morphia." This agrees remarkably with the researches of very recent times. Barth showed (*"Chem. Central."* 1913, I., 118) that morphine meconate is 25 per cent. stronger than the equivalent dose of morphine hydrochloride. Straub has found that when narcotine is added to morphine in combination with meconic acid, the narcotic power is increased, and recommends this double salt under the name of "narcophine" (*C. & D.*, 1913, I., 834). Ure would not have been very surprised if he had attended the evening meeting of the Pharmaceutical Society of Great Britain, held in London on March 11, 1913, when Dr. Jowett stated:

"Inasmuch as it is clear that the action is not due to the morphine alone, and as the amounts of the other alkaloids

probably vary, and not necessarily in the same proportion as morphine, it follows that standardisation of morphine alone does not ensure an invariable preparation, though it is better than no standardisation at all."

Christison, of Edinburgh, in the "Journal de Pharmacie" of 1835 (t. 21, p. 542) discussed Ure's proposition to estimate the quantity of morphine by the determination of the quantity of meconic acid, stating that this is quite impracticable, as these are not present in equivalent proportions. The author then referred to Mannich and Schwedes' method ("Apoth. Ztg.," 1913, 8, 82) for standardising pantopon, stating that it is quite efficient for that purpose, but cannot be applied to opium, as a great part of the alkaloids stays behind in the mother-liquor of an opium solution. Finding it impossible to devise a method for the determination of all the alkaloids together, the author has returned to the method given ten years ago for the determination of narcotine and codeine in opium (*C. & D.*, 1903, 11, 136). It is not so complicated as that of Caspari ("Y.B.P.," 1905, p. 65) and of Andrews ("Y.B.P.," 1912, p. 21) for the determination of codeine alone, and it has given better results. For the determination of morphine, the lime method of the British and Dutch Pharmacopœias is preferable to the ammonia method of some other Pharmacopœias. Ure gave a colorimetric method for the determination of meconic acid, based upon the characteristic brown-red tint, of a depth proportional to the amount of the meconic acid, produced on the addition of "a few drops of red muriate of iron" to a solution of opium. This test only compares the quantity of meconic acid in two or more opiums, giving no absolute quantity; also there is great difference in tint between a solution of opium coloured with iron chloride and a solution of meconic acid similarly coloured, owing to the tint of the opium extract. This may be partially remedied by adding some drops of a solution of a yellow aniline dye, such as orange G. or Bismarck brown, but it is better first to purify the opium solution in a solution of meconic acid; the acid is quantitatively precipitated by Goulard's extract, and the method proposed is as follows:

Macerate 1 gram of opium with 100 c.c. of water for twenty-four hours, shaking the mixture frequently. Then filter and mix 25 c.c. of the opium solution with 5 c.c. of Goulard's extract. Allow to stand fifteen minutes or more, and transfer the precipitate to a small filter and wash with water until the washings are colourless. Dissolve the precipitate in warm decinormal hydrochloric acid until the volume is exactly 100 c.c. This yellowish solution contains the meconic acid of 250 milligrams of opium in 100 c.c.

Next, in a 250-c.c. measuring flask, dissolve 50 milligrams of pure meconic acid in decinormal hydrochloric acid, adding sufficient of a one-tenth per cent. solution of orange G. (about two c.c.) to give it, after filling to the 250-c.c. mark, the same colour as the solution of the meconic acid of the opium. Put 5 c.c. of each of the two solutions in a little glass vessel with parallel sides a centimetre apart, and divided into two parts. (This was shown, each division holding about 10 c.c.) To each of the solutions add one drop of the test-solution of ferric chloride. Then add to the darker of the two solutions water from a burette until the same colour is obtained in each division.

The examination of four samples of opium gave the following results:

	A	B	C	D
Morphine ...	12.2	14.1	10.5	12.4
Narcotine ...	5.8	4.8	6.8	7.6
Codeine ...	1.1	0.7	1.5	0.9
Meconic acid ...	5.4	4.3	4.5	6.4

The data are not sufficient to fix an average of the quantity of alkaloids that a "normal" opium should contain. But supposing that as the average of the analyses of a hundred samples of opium collected in different years and of different origin a proportion of 12 per cent. of morphine, 6 per cent. of narcotine, 1 per cent. of codeine, and 5 per cent. of meconic acid be found, then it is possible to make from each four samples of opium with higher and lower figures than the average a normal opium that contains the desired quantity of each principle. By mixing 274 grams of opium A with 268 grams of opium B, 216 grams of opium C, and 242 grams of opium D, there is produced one kilogram of "normal" opium. For practical purposes the use is allowed of opium containing

morphine varying between 11.5 and 12.5 per cent., narcotine between 5.7 and 6.3 per cent., codeine between 0.9 and 1.1 per cent., and meconic acid between 4.7 and 5.3 per cent. If the quantity of morphine only in the above-mentioned opiums be taken into account, and the opium be diluted with sugar of milk or starch until the opium-powder of the International Conference of 1902 is obtained, there are produced four opiums each with 10 per cent. morphine, but containing percentages of other alkaloids as follows:

	Narcotine	Codeine	Meconic Acid
A ...	4.8	0.9	4.4
B ...	3.4	0.5	3.2
C ...	6.5	1.4	4.4
D ...	6.1	0.7	5.2

Admittedly, "normal opium" based on four active principles would be improved if standards for five or more active principles were introduced; but there are limits to everything, and methods for the standardisation of the other active principles are not available. If a powdered opium is prepared by mixing four opiums of different origin without the addition of an inactive drug, the chance that the opium will have about the same activity is much greater than if it is made from opium diluted with sugar of milk or starch to contain 10 per cent. of morphine. The strength of opium cannot be determined by a physiological method, so that a chemical method must suffice; but this should ensure us a drug that has approximately always the same therapeutic action. In conclusion, the author pointed out that nowhere better than in London can the amount of the different active principles be fixed for the "normal opium."

DISCUSSION.

The PRESIDENT, after referring to Professor van der Wielen's marvellous command of the difficult English language, called for criticisms, remarking that several experts on opium analysis were present.

Mr. E. F. HARRISON agreed with the principle of the paper, and said the real solution of the difficulty of standardising drugs such as opium would only be met by bulking large quantities of assayed drugs. He doubted if it was worth while taking meconic acid into consideration.

Mr. R. A. CRIPPS said he would not criticise the paper as the analytical methods were not indicated. He agreed with Mr. Harrison that a necessary corollary of the suggestions would be bulking of large quantities of opium.

Mr. H. W. GADD considered that the alkaloids were likely to be more active in the natural condition combined with meconic acid. He did not see how the standardisation is to be done, and it would cause no end of bother to the wholesale druggist. He did not recognise one word ("mils") in the paper as English; possibly it might be Dutch. (Laughter.) [NOTE.—Where that term occurs in the typewritten copy supplied to us we have changed it to "c.c.," this being what the author means.—EDITOR, *C. & D.*]

Mr. T. M. CLAGUE disputed the right to include narcotine as one of the alkaloids to be standardised. Brady and Deane many years ago showed that this alkaloid gave rise to convulsions, and that its inclusion in opium preparations is not good for the patient.

Mr. N. H. MARTIN pointed out that Brady devised opium galenicals in which narcotine was specially eliminated. These found great favour with medical men, and are still employed.

Mr. H. FINNEMORE dissented from the view that the meconic acid combination of opium alkaloids is of any special value in the absence of evidence on the point.

Mr. F. W. GAMBLE agreed with the last speaker. He also pointed out that a British preparation of the total mixed alkaloids from opium is badly needed.

The PRESIDENT concluded the discussion with the remark that the outcome of the paper is to set the first problem for the Research Committee of the British Medical Association. He thanked the author for his paper and his interest in British Pharmacy.

The next communication was on the

Myrrh of Commerce.

By E. M. HOLMES.

THE author first pointed out that the Hebrew word *Lôt*, translated myrrh in Genesis, in reality refers to labdanum, while *Môr*, the Hebrew word for myrrh in the Psalms and Canticles, is perfumed myrrh from *Commiphora erythraea* var. *glabrescens*, Engl., which is collected in the Ogaden country in Somaliland and still sent via Bombay to China for use in joss-sticks. The medicinal myrrh of commerce is from *Commiphora Myrrha*, Holmes, and the book by Dr. R. E. Drake Brockman on Somaliland, published this year, adds considerably to the hitherto imperfect knowledge of the trees yielding myrrh as regards that country. The author's verification of the source of Somali myrrh was due to Mr. and Mrs. Lort Phillips bringing back with them specimens of leafy twigs with fruits and bark off the tree called "Didthin" by the Somalis. Dr. Drake Brockman adds now that the Somalis distinguish two kinds of "Mal-Mal" or myrrh—viz., (1) Guban myrrh obtained from the low-lying torrid, low-lying hilly plains extending inland to the mountains; (2) Ogo myrrh collected on the mountain ranges of the interior, including the Haud, Nogal Valley, and Ogaden. Since publishing his book Dr. Brockman finds the Somalis differentiate two kinds of Guban myrrh-trees, "Didthin ad" (white) with narrower and paler green and slightly toothed leaves than "Didthin madow" (black), with leaves nearly entire. There seems to be little, if any, difference in the myrrh they yield. Ogaden myrrh consists of irregular masses of an oily consistency, made up of numerous tears varying in size from a pin's head to a pea. It fetches a lower price than the Ogo variety, which is invariably powdery on the surface. The superiority of Ogo over Guban myrrh is due to it being derived from finer trees, which attain 15 ft. high. The plants producing Guban "Mal-Mal" seldom exceed 4 ft. or 5 ft. Guban myrrh is distinctly less bitter than the Ogo variety, and its whitish scrapings placed on absorbent paper quickly produce a large grease-spot, while a quite insignificant spot is left by those of Ogo "Mal-Mal." Dr. Brockman states that the best Somaliland myrrh comes from the far interior, the Dulbahanta and Ogaden countries, and is invariably packed in goat-skin bags. The Somalis adopt no particular method of collecting the various gums, which are allowed to exude and fall to the ground. Leading the nomadic life, the old women and children add to their stock by degrees, only sending the goat-skin bags down to the coast when well filled. The Arabian and Indian traders call the gum resin "Murr." The Habbak hadi, or perfumed myrrh, is brought down by the Ogaden caravans. It is packed in separate goat-skins, never being mixed with the true myrrh.

The PRESIDENT said the research was one on ancient history brought up to date.

There was no discussion.

The PRESIDENT, in calling upon Dr. Power to read the next paper, said that Dr. Power, since he last appeared before the Conference, had been awarded the Hanbury medal. It had given him particular pleasure as President of the British Pharmaceutical Conference to record his vote for Dr. Power.

Chemical Examination of Wheat Germ.

By Dr. FREDERICK B. POWER and Dr. ARTHUR H. SALWAY.

WHEAT GERM, formerly a waste product or only used as fodder, has of recent years been utilised for its dietetic value in certain kinds of bread and other forms of food. In distinction from ordinary wheat-flour, the germ of wheat appears to be particularly characterised by its high percentage of fat and high nitrogen-content.

The present investigation was the indirect sequence of a research of phytosterol glucosides, for which a considerable quantity of sitosterol, a definite phytosterol from the fatty oil of wheat germ, was required (*C. & D.*, May 24, 1913, index folio 804). Burian (1897) isolated sitosterol. Lewkowitsch has recorded the physical and chemical constants of the oil from wheat germ, and of the mixed fatty acids therefrom. Richardson and Crampton ("Ber.," 1886, 19, 1180) found wheat germ

contained, besides fatty oil, about 15 to 18 per cent. of sugar, consisting chiefly of cane sugar, and another sugar, presumed to be raffinose. The same authors also isolated allantoin, and noted the presence of "a wax-like, unsaponifiable fat," as also of several albuminous substances. Schulze and Frankfurt (1893) conclusively showed the presence of both choline and betaine in wheat germ, and subsequently established the presence of raffinose. Frankfurt in 1897, in addition to the above-mentioned compounds, also indicated the occurrence of asparagine, lecithin, glucose, and a ferment which vigorously inverts cane sugar.

The material employed for the investigation consisted of a good quality of wheat germ obtained directly from a large flour-mill near London. A preliminary test for an alkaloid gave very slight response, and from 25 grams of the material successively extracted with various solvents in a Soxhlet apparatus the following amounts of extract (dried at 100°) :

Petroleum (b.p. 35-50) ...	2.08 grams = 8.32 per cent.
Ether ...	0.14 " = 0.56 "
Chloroform ...	0.31 " = 1.24 "
Ethyl acetate ...	0.19 " = 0.76 "
Alcohol ...	6.20 " = 24.80 "
8.92 grams = 35.68 per cent.	

For complete examination 50.8 kilos. of the wheat germ were extracted by continuous percolation with hot alcohol, and after the removal of the greater portion of the alcohol 22.75 kilos. of a light-brown, viscid extract remained. The results obtained by examination of this extract are thus summarised :

On steam distillation no appreciable amount of volatile oil was yielded, a thick aqueous emulsion containing a considerable quantity of a fatty oil and a small quantity of resinous material being left in the distillation-flask. This did not separate on keeping, but agitation with hot amyl alcohol dissolved the fatty oil, leaving the resinous material suspended in the aqueous liquid. This resinous material was filtered out, and after washing and drying amounted to 22 grams. It was separately examined, but no definite substance could be isolated from it.

The aqueous liquid, after the separation of fatty oil and resin, was extracted many times with ether, this solvent removing about 3 grams of viscid, fatty material, evidently similar to the main portion of fatty oil. The aqueous liquid was next shaken repeatedly with hot amyl alcohol. The united amyl-alcohol liquids were washed with a little water, and the solvent removed by distillation under diminished pressure, when a quantity (10 grams) of a dark-brown syrup was obtained. The alcoholic solution of this, on keeping for some time, deposited a small quantity of a crystalline solid (allantoin), subsequently isolated in larger amount from the aqueous liquid, as described below. The alcoholic liquid from which the allantoin had separated was evaporated and the residue divided into two portions. One portion on heating with dilute sulphuric acid yielded a small amount of a sugar (m.p. of osazone 210°). No other definite hydrolytic product was obtained, but it was thus evident, however, that the material was glucosidic in character.

ISOLATION OF SINAPIC ACID.—The other portion of the above-mentioned residue was heated for a few minutes with excess of aqueous potassium hydroxide, the mixture then acidified with dilute sulphuric acid, and subsequently extracted with ether. After washing and drying the ethereal liquid, the solvent was removed, when about 0.5 gram of a brown, crystalline solid remained, which on purification was found to be sinapic acid (4-hydroxy-3,5-dimethoxycinnamic acid, $C_6H_2OH.(OCH_3)_2CH:CH.CO_2H$). This was confirmed by methylation into 3:4:5-trimethoxycinnamic acid, which melted at 123° to 124°, as shown by Gadamer. The isolation of sinapic acid as a product of alkaline hydrolysis and the presence of choline in wheat germ make it seem highly probable that the sinapic acid was originally present as sinapine, which is a choline ester of sinapic acid.

ISOLATION OF RAFFINOSE.—The original aqueous liquid after extraction with amyl alcohol slowly deposited a quantity of a colourless crystalline solid. This on re-

crystallising from very dilute alcohol separated in slender, elongated needles containing water of crystallisation. The air-dried substance melted at 85° , and the anhydrous solid at 135° to 140° . The results of analysis and the optical rotatory power indicate this to be raffinose. Raffinose in the anhydrous state has been stated to melt at 118° to 119° , and in a 10-per-cent. solution has a specific optical rotation of $[\alpha]_D +104.4^{\circ}$. The somewhat higher melting-point (135° to 140°) and rotatory power ($[\alpha]_D +118.4$) observed in the present instance are doubtless to be attributed to a greater degree of purity of the substance.

The aqueous liquid from which raffinose had separated as described above was treated with a solution of basic lead acetate. A comparatively small amount of a pale-yellow precipitate was produced, which did not contain tannin, but which gave on hydrolysis with alkali a further small amount of sinapic acid.

ISOLATION OF CANE SUGAR.—The filtrate from the above-mentioned basic lead-acetate precipitate yielded a considerable quantity of a reducing-sugar readily yielding *d*-phenyl-glucosazone (m.p. 210°), and ultimately colourless prismatic crystals which melted at 184° , and proved to be cane sugar ($C_{12}H_{22}O_{11}$).

ISOLATION OF ALLANTOIN, BETAIN, AND CHOLINE.—The authors described fully experimental work on the syrupy liquid precipitated with mercuric nitrate, that resulted in the isolation of colourless rhombohedral prisms, which decomposed at about 238° . This substance possessed all the characters of allantoin ($C_4H_6O_3N_2$), and its identity was confirmed by an analysis. Another portion of the syrupy liquid was precipitated with an aqueous solution of phosphotungstic acid, and the precipitate, after certain treatment, yielded a platinichloride corresponding to that of choline.

EXAMINATION OF THE FATTY OIL.—The fatty oil, after the removal of the solvent (amyl alcohol), amounted to 3,600 grams, equivalent to about 7 per cent. of the weight of wheat germ employed.

ISOLATION OF SITOSTEROL.—A portion (300 grams) of the fatty oil was hydrolysed with alcoholic potassium hydroxide, the greater part of the alcohol removed, water added, and the alkaline liquid repeatedly extracted with ether. The pale-yellow ethereal liquid was washed, dried, and the ether removed, when 20 grams of a crystalline residue was obtained. On dissolving the latter in hot ethyl acetate it yielded 11 grams of a pure crystalline substance, which separated in colourless needles melting at 138° . An analysis gave results corresponding to the formula $C_{27}H_{48}O$, $H_{16}O$, H_2O . The rotatory power was $[\alpha]_D -32.2^{\circ}$, the substance being thus shown to be pure sitosterol. The amount obtained from 360 grams of the fatty oil indicates that sitosterol is contained in the wheat germ to the extent of about 0.26 per cent. The ethyl acetate was removed from the deep-yellow mother-liquor from the sitosterol, and the residue distilled under diminished pressure, fractions passing over at 80° to 250° at 20 mm. and above 250° at 20 mm. respectively being collected. The first fraction was a limpid, yellow oil, which possessed a strong, somewhat aromatic odour, but did not yield the characteristic phytosterol reaction. The fraction boiling above 250° at 20 mm. pressure yielded a little sitosterol melting at 138° .

IDENTIFICATION OF THE FATTY ACIDS.—The alkaline liquid resulting from the hydrolysis of the fatty oil from which the sitosterol had been removed was next acidified with sulphuric acid and again extracted with ether. This ethereal solution was washed, dried, and the ether removed, when about 230 grams of fatty acid was obtained. The mixture of saturated and unsaturated acids was first separated into solid and liquid portions by means of the lead salts and treatment of the latter with ether. Solid acids obtained from the lead salt were found to be a mixture of palmitic and stearic acids, apparently in about equal proportions. The liquid acid was found to be pure linolic acid.

In the course of the present investigation the occurrence of sitosterol, choline, betaine, allantoin, cane sugar, dextrose, and raffinose found by previous investigators in wheat germ has been confirmed, but no evidence was obtained of the presence of asparagine, recorded by

Frankfurt. So far as known to the authors, the nature of the fatty acids, now shown to consist of palmitic, stearic, and linolic acids, had not hitherto been determined. The amount of resinous material contained in the wheat germ is exceedingly small, representing only about 0.04 per cent. of its weight. A small amount of amorphous glucosidic material was also obtained. The occurrence of a very small amount of sinapic acid in some form of combination is of special interest, as the acid has hitherto only been known to occur in mustard-seed, or at least in the family of *Cruciferae*. It is highly probable that the latter occurs in the same form of combination (choline ester of sinapic acid) in wheat germ.

The investigation was done at the Wellcome Chemical Research Laboratories.

There was no discussion.

The next paper was

Structure of the Soya Bean.

By T. E. WALLIS, B.Sc., F.I.C.

SOYA BEANS, which average 8 mm. in length, 7 mm. in breadth, and 6 mm. in thickness, are roundly ovoid in shape, the hilum in the middle of one of the longer being 3 to 4 mm. long. On soaking, taking up more than 1.25 times their own weight of water, and expanding unevenly, they become more kidney-shaped. About 99 per cent. of the beans are pale yellow, there being also a few darker coloured beans (black or brown) of smaller size and a more elongated form. For this paper the author had made a complete histological study of the bean, and presented seven drawings of sections and powder as viewed through the microscope. We hope to publish these later.

DISCUSSION.

Professor H. G. GREENISH said that soya is scarcely a drug, but the increasing use of soya oil would soon lead to ground soya-bean being found in places where it ought not to be. There is great difficulty in distinguishing ground meals from one another, especially those derived from leguminous seeds. As regards soya bean, the characteristic calcium-oxalate crystals in pairs enable its detection in other powders.

Mr. E. S. PECK suggested that the author should give the actual name of the plant from which his seed was derived. There is one variety which contains a ferment which converts urea into ammonium carbonate. He pointed out that in a Bulletin of the U.S.A. Department of Agriculture some thirty-six varieties, classified into three sets of species, are mentioned.

Mr. P. H. MARSDEN said a paper of this kind requires hours of work. He did not notice in the paper any reference to the fact that soya bean does not contain starch. He added that it is now being used largely in the manufacture of gluten bread, and that much of the oil is pressed in China.

The PRESIDENT dwelt upon the commercial aspect of the communication, especially in relation to the search for oils for use in soap-making. The paper is one of the greatest importance to large manufacturers in this country who are raising many millions of capital for the purpose of obtaining oils.

Mr. WALLIS, in replying, said he had not troubled to have the seeds specially identified. He promised to have this done. He also pointed out that the general absence of starch is mentioned in two parts of his paper.

The SENIOR SECRETARY then read in abstract the two following papers on thyroid pharmacy. The first of these was

Some Factors in Thyroid Pharmacy.

By R. GLODE GUYER, Ph.C.

This follows up the paper by Mr. N. H. Martin at last year's Conference (*C. & D.*, 1912, II., 200), with the idea of obtaining further territorial information about thyroid glands. The daily supply from the Edinburgh market was tabulated according to the number of lobes in each delivery, their moist weight when trimmed, and their weight after drying at 40° C. From the author's long and bulky table we abstract the maxima and minima for the daily average weight (moist and dry) per lobe during each month from December 11, 1912, to

June 27, 1913, and present the results in Table I. The average weight derived from the bulked month's supply is given in the third column. In two of the months the extremes were met with on subsequent days, while the daily maxima and minima for the average dry weight did not always coincide with those for the moist weight. The total number of lobes in each month and their weight are shown in Table II.

TABLE I.
Average Weight of Lobes in Grains.

Month	Daily Average				Monthly Average	
	Minimum		Maximum			
	Moist	Dry	Moist	Dry	Moist	Dry
December ...	13.02	8.11	25.00	8.74	20.27	6.57
January ...	14.57	6.22	25.69	8.51	21.65	7.48
February ...	20.50	5.50	28.19	9.31	23.19	7.21
March ...	19.52	5.58	35.90	10.93	26.46	8.22
April ...	26.64	6.51	38.98	12.61	4.75	10.78
May ...	27.57	8.55	42.36	12.01	25.00	10.71
June ...	20.30	68.2	38.1	9.83	29.89	8.48

At the end of each month the dried glands were bulked together, freed from fat, and powdered. A sample of the month's supply was put aside for the estimation of the iodine. No iodine factor is recorded for the January lot, as it was unfortunately bulked off with the previous month's supply before the sample was taken. The averages are set out in Table II., together with the iodine contents:

TABLE II.

Month	Number of Lobes	Moist Weight of Lobes		Dry Weight of Lobes		Average Dried Weight of Lobes		Average Weight of Fat-free Lobes		Iodine in Fat-free Substance
		lb. oz.	grs.	lb. oz.	grs.	lb. oz.	grs.	lb. oz.	grs.	
Dec. ...	5,023	14 3/4	20.27	4 11 1/2	6.57	4 1 1/2	5.7	0.258		
Jan. ...	7,220	22 3/4	21.65	7 11 1/2	7.43	6 10 1/2	6.46	0.0		
Feb. ...	3,966	13 2 1/2	23.19	4 1 1/2	7.21	5 9 1/2	6.37	0.222		
March ...	4,142	15 10 1/2	26.46	4 14	8.22	4 3 1/2	7.1	0.236		
April ...	5,374	26 4 1/2	34.25	8 4 1/2	10.78	6 15	9	0.229		
May ...	5,981	29 14 1/2	35	9 2 1/2	10.71	8 2	9.51	0.231		
June ...	4,242	18 3	29.8	4 14 1/2	8.08	4 0 1/2	6.60	0.279		
Totals...	35,968	140 1 1/2	27.23	43 12 1/2	8.50	37 10 1/2	7.24			

From Table I. it is seen that there is a great variation in the weight of the glands, and although the monthly average weight seems to increase steadily, the daily figures show this to be merely a coincidence rather than a real factor. In each month some supplies were composed of large lobes, and others of small lobes, and it is not likely that the sequence of increment of weight can be repeated each year so as to produce such a steady change in weight with different seasons. The variation is accounted for by the fact that various flocks were killed, sometimes lambs, and at other times crossbreed, half-breed, Cheviots, etc. In Edinburgh the latter are the chief breeds killed, the small Highland mountain sheep not being marketed, as a rule, below Perth. The stocks from which these glands were taken were all pastured either in the Border Counties or in East Lothian, and therefore it may be assumed that these figures apply equally as well to any English supply, and are not exclusively typical of Scottish glands.

This marked variation in size called for further investigation, and one consignment of 100 glands delivered on July 3 was examined, each lobe being weighed separately. The weights ranged from 10 to 62 grains, falling if subdivided into groups as follows:

10 to 20 grains ... 23 lobes | 30 to 40 grains ... 18 lobes
20 to 30 grains ... 48 lobes | Over 40 grains ... 11 lobes

The "British Pharmaceutical Codex" gives the average weight of each gland as 4 1/2 grains (or 69.5 grains) per lobe, while Mr. Martin obtained an average of 22 grains. The glands under consideration give an average of 27.25 grains

per lobe. To find out why such great variations occur, two visits were made to the slaughter-houses, and the glands removed in the author's presence. Full particulars were taken of the class of sheep, with the following results:

Sixteen crossbreed lambs, about four to six months old, gave an average of 15.7 grains per lobe, with a maximum of 23.5 grains and a minimum of 8.5 grains.

Twelve Cheviots and crossbreeds one year old gave an average of 40.8 grains, with a maximum of 70.5 grains and a minimum of 21 grains per lobe.

Four two-year-old crossbreeds gave an average of 28.7 grains, with a maximum of 41 grains and a minimum of 20.5 grains.

The established variation in the age and breed of sheep accounts for the great increase of lobe weight in March, April, and May, as then last season's lambs or sheep about a year old were being killed. The maximum weight per lobe of lambs overlaps the minimum weight per lobe of the one-year-old sheep, and therefore it is quite possible to get a set of lambs producing glands equal in weight to those of one-year-old sheep, and, *vice versa*, glands from one-year-old sheep small enough to be classified as lambs'.

In many cases the lobes were unequal in size, one lobe in particular weighing 70.5 grains and the other 53 grains only. The sheep was one year old and perfectly healthy.

Various standard authorities give a ratio of 1 to 5 as that of dried to moist glandular substance, while Mr. Martin obtained 1 to 3.3. The latter closely corresponds to the factor (1 to 3.6) now brought forth, and it would be interesting to trace the source of the usual published factor, as it appears unattainable, and is likely to be misleading in commerce. The author considers that too much stress is laid upon the vexed question of the iodine factor, as it is as yet an open question whether this does represent the therapeutical value of the moist drug, and until such relation is established it should not be made a public standard.

The process of Mr. C. E. Stuart (evaporating in a nickel vessel 1 gram of gland with 10 c.c. of liq. potasse in a sand-bath to dryness before completely charring) was used, so that the results should be in direct harmony with Mr. Martin's. In working this process (and the same applies to the other processes) great care had to be taken to ensure complete combustion, or else a low figure was obtained, and, on the other hand, every precaution had to be taken to avoid too vigorous application of heat, or volatilisation of iodine would ensue. For these estimations the author's thanks are due to his colleague, Mr. Stenhouse. It is to be noted that, while the individual weights of the lobes varied greatly, the iodine factor maintained a steady equilibrium, appearing to support those who advocate a standard 0.2 per cent. of iodine in the dried glandular substance, but the author deprecated iodine as the standard basis. He advocated establishment of a factor not exceeding 1 to 3.5 for the ratio between the moist and the dried fat-free glandular substance. It also seems most desirable that there should be a uniform system of prescribing and dispensing thyroid gland. Doctors frequently prescribe, say, 3 grains of thyroid gland in tablet form, without defining whether they mean moist or dried substance. Dispensers differ as to which is meant. Mr. Guyer thinks that as the British Pharmacopoeia definitely states "Thyroideum Siccum" as the substance to be used, pharmacists should always employ that standard when dispensing.

Iodine-content of Thyroid Gland.

By N. H. MARTIN, Ph.C., F.C.S., F.R.S.E.

The table on p. 174 summarises the iodine-content of thyroid gland for the various months of the year in 1912-13, in continuation of the series presented to the Conference by the author last year (*C. & D.*, 1912, II., 200). The number of lobes used was 13,927, against 6,560 in the previous table, the average weight of each fresh lobe being 1.30 gram, against 1.424 gram for 1911-12. The average iodine in the thyroideum siccum was 0.407, against 0.343 per cent., and in each fresh lobe 0.096 per cent., against 0.091, while the average iodine per lobe was 0.00123 gram, against 0.001296. These figures would

prove conclusively that, so far as a standard (if such is deemed advisable) for sheep's thyroids is concerned, a strength of 0.25 per cent. would not be difficult to maintain in the district referred to.

Date	No. of L-tes used	Weight of Fresh Lobes	Weight of Dry Thyroid Obtained	Average Weight of each Fresh Lobe	Average Yield of Dry Thyroid per Lobe	Iodine in Dry Thyroid	Iodine on Fresh Weight	Average Iodine per Lobe
1912		Gms.	Gms.	Gm.	Gm.	%	%	Gm.
July.....	1,223	1,492	351	1.21	0.28	0.46	0.108	0.00131
Aug.	1,944	2,400	449	1.23	0.23	0.47	0.188	0.0018
Sept.	1,220	1,452	351	1.19	0.28	0.45	0.108	0.00128
Oct.	1,318	1,429	292	1.08	0.22	0.51	0.104	0.00112
Nov.	942	988	258	1.14	0.24	0.48	0.110	0.00114
Dec.	564	695	152	1.23	0.26	0.45	0.098	0.00120
1913								
Jan.	470	535	164	1.13	0.34	0.39	0.119	0.00134
Feb.	1,172	1,488	348	1.16	0.29	0.48	0.188	0.00111
March....	1,032	1,638	381	1.58	0.36	0.37	0.066	0.00136
April ...	1,584	2,505	739	1.58	0.46	0.28	0.082	0.00129
May	1,826	3,207	816	1.75	0.44	0.29	0.073	0.00128
June.....	632	836	224	1.32	0.35	0.36	0.096	0.00127
	3,927	18,665	4,494	1.30	0.312	0.407	0.096	0.00123

There was no discussion.

It was now 1.15, and the Session was adjourned till Wednesday.

PRACTICE SECTION.

THE proceedings in the Practice Section on Tuesday afternoon consisted of the views of (1) a lawyer, Mr. H. Wippell Gadd; (2) a retailer, Mr. J. P. Gilmour; (3) a wholesaler, Mr. C. A. Hill, managing director of The British Drug Houses, Ltd.; and (4) a public analyst, Mr. E. Hinks, on the

Sale of Food and Drugs Acts.

Mr. W. S. Glyn-Jones, M.P., a lawyer and pharmacist, presided. We wonder if the Executive Committee were



MR. W. S. GLYN-JONES, M.P.

serious or sarcastic when they asked him to take the chair? Perhaps they forgot that the Chairman was prosecuted and fined under these Acts fifteen years ago! That was a momentous happening for the drug-trade and all who are connected with these Acts of Parliament, not less than the defendant in the case which was tried by Sir John Dickinson, now the presiding Magistrate at Bow Street, and who agreed with the defence that lime-water is liable to

decomposition, but did not let the defendant off, because his lime-water had not decomposed. Mr. Glyn-Jones had tried to get a lawyer to present his defence to the court, but found none too eager, so "played the fool" (according to the proverb) by appearing for himself. His defeat was a fine stroke of luck for the drug-trade, for it put his back up, and stung him into reading for the Bar. More than that, within a year he had convinced retailers that what they needed most was a Chemists' Defence Association; and he got it. He saw further ahead, knowing that the Association could not go further than Courts of first instance, and with the help of Mr. Carteghe, Mr.

Umney, and Mr. Wootton, chiefly, established the Drug Trade Appeal Fund. In the course of time another medicine liable to decomposition was reported on by a public analyst without the fact being mentioned on his certificate, and Mr. Glyn-Jones pounced on it, and fought the case up to the High Court, where Judges upheld the point which he had argued at Poplar before he was a lawyer. Could a better Chairman have been got for Tuesday afternoon?

The CHAIRMAN, on rising to make a few introductory observations, was most heartily welcomed. Acting under instructions, he stated that the meeting would have to conclude at five o'clock. He mentioned as his second instruction that the meeting was one at which smoking would be allowed. (Applause.) It would be conducive to the greatest amount of information being imparted, and to useful discussion, if there was a recognised time limit. There were, he reminded them, four papers dealing with the operation of the Sale of Food and Drugs Acts from different points of view. His suggestion was that the reader of each should have ten minutes, and that there should subsequently be a free discussion, each speaker being limited to five or seven minutes. At the conclusion of this the readers, in their order, would each have five minutes in which to reply. If as Chairman he were allowed ten minutes at the close, the proceedings would pretty well occupy the time up till the hour he mentioned. (Applause.)

The suggestions from the chair were agreed to.

It should be noted that each exponent was assigned a point of view from which to treat the subject.

I. The Lawyer's Point of View.

By H. WIPPELL GADD, F.C.S.,
Barrister-at-Law and Pharmacist.

THE author considered that pharmacists are justly dissatisfied with the Acts and their administration. He pointed out that while they apply to sales and dispensing by pharmacists they do not apply to medicines dispensed by medical men for their patients. He proceeded to discuss the application of the law to retailers, saying that it is more stringently applied to pharmacists than to unqualified dealers in drugs. He then considered the definition of "drugs" as given in the 1875 Act, and as interpreted by the courts in the beeswax case, saying that this "brings us face to face with the chief defect in the Acts, and the cause of much of their maladministration," the reason being that the



MR. WIPPELL GADD.

Acts lay down no standards for drugs. Public analysts resort to the British Pharmacopœia, although it is not an authority under the Acts. He mentioned the High Court decisions on this point, and endorsed Mr. Umney's suggestions for creating a new British Imperial Pharmacopœia. He said that the defects in the administration of the Acts include the method of taking samples, which leaves much to be desired. The inspector, medical officer of health, the public analyst, and the committee of the local authority may, singly or in combinations of two or more, have a hand in it, with the result that there have been many hard cases in which, by the caprice of some person or persons unknown, respectable traders have been called upon to answer charges of a quasi-criminal nature, and ostensibly affecting their commercial integrity; whereas their fault, if any, has been of a purely technical kind, or, it may be, as in the case of many sellers of diluted mercury ointment, is of the quality rather of a virtue. The provision that under Section 6 of the 1875 Act no guilty knowledge need be alleged, and a master is responsible

for the acts of his servants, even though these be against his express instructions, although seemingly harsh, is essential for the protection of consumers. Further, it is a grievance that such matters should be tried in petty criminal courts, and Mr. Gadd suggested that cases might be heard in a different building or room from that in which the ordinary sittings are held, or on different days, but the main endeavour should be to prevent vexatious prosecutions. No action should be taken unless it is calculated to be useful in the interests of consumers, and will not hamper and harass honest traders. The author wondered if the principle of Section 4 of the 1899 Act as regards regulations for milk, cream, butter, and cheese should not apply to drugs. He also considered that the appointment of a Board of Reference is long overdue, and said a short Act is needed to the effect that the Local Government Board shall set up a subsidiary Board, consisting of medical officers of health, pharmacists, and analysts in equal numbers, assisted by expert legal advisers. It should be the duty of this body to select such drugs as appear to need attention, and to lay down standards to which they should be required to conform. These standards should be communicated by periodically issued circulars to local authorities, and no local authority should be allowed to take proceedings in respect of any drug not on the official list without first submitting the facts to the Board of Reference. A committee, consisting of members of the Pharmaceutical Society and of the Society of Public Analysts, was set up seven years since, and the author mentioned that there has been a distinct improvement in recent years, and fewer prosecutions of doubtful utility and positive hardship. There is one other method, distinct from new legislative proposals, by which pharmacists can protect themselves from the pecuniary penalties and the mental and moral damages incident to proceedings under the Sale of Food and Drugs Acts—viz., the warranty provided for by the Acts. The following formula impressed on the face of an invoice, and signed in writing by the supplier or suppliers or some person authorised to sign for him or them, has been used for some years, and would appear to be a suitable form of warranty as between the wholesale and retail drug-trade:

"I/We guarantee that all pharmacopoeial preparations herein named correspond to the descriptions and conform to the standards of the British Pharmacopoeia, 1898, at the time of sale, and that all other articles are genuine as described."

At the best, Mr. Gadd concluded, penal Acts can never be other than clumsy precautions for ensuring purity, the real safeguards for the supply of genuine medicaments being now, as always, the maintenance of a properly trained, efficiently educated, and adequately remunerated class of suppliers, inspired by personal and corporate traditions of honour.

II. The Point of View of the Wholesaler.

By C. A. HILL, B.Sc., F.I.C.

THE printed programme for the Jubilee meeting states the second of the four points of view from which this

discussion is to be opened as that of the "Wholesale Pharmacist," but the editor of the "Pharmaceutical Journal" (June 14, p. 834) says that this title is an abomination—presumably the double rôle of manufacturer and wholesale vendor is intended. The wholesaler is concerned with the Acts from every point of view, but when the points of view of the lawyer, the pharmacist, and the public analyst have been deducted there is not so very much left that is peculiar to the wholesaler. The manufacturer *quâ*

manufacturer is quite willing to produce his commodities according to any standard that may be agreed upon between himself and his buyer—i.e., to sell to any specification and to base his prices accordingly. Wholesale druggists are themselves manufacturers of many of the things which they sell, but in these cases the rôle of the manufacturer is apt to become lost in the more engaging responsibility of the wholesale vendor; and the latter function alone is to be considered in the case of those articles which the wholesaler does not himself manufacture, but buys in large quantities from the manufacturers and resells to the pharmacist. There was probably a time when the wholesale druggist was a wholesaler pure and simple, buying his commodities in bulk quantities, breaking bulk and reselling in smaller quantities. There was no analytical laboratory, no guarantee, no British Pharmacopoeia, no Food and Drugs Act. How far we have progressed since that time, and how different is the state of affairs to-day, one need not stop to consider.

"The British Pharmacopoeia as a Standard" was the title of a paper by Mr. Dott read before this Conference in London in 1900, and Mr. Hill omitted discussion of that question on this occasion. In 1905 a discussion took place on the question of warranties, in which a fair amount of ground was covered by a number of writers, of whom Mr. John C. Umney was the most prolific. The correspondence set forth very adequately the arguments for and against warranties, the position of wholesale druggists, and the possible effect on the pharmaceutical status. In his own contribution Mr. Hill pointed out that the wholesaler is ready to stand by the goods which he sells either with or without a legal warranty, and asked:

"What would the retailer think of the wholesaler who in turn said: 'I did not make this chemical. I bought it from Germany. I did not test it before sending out; I bought it with a guarantee.'"

Mr. Umney, quoting these words, said:

"This is the crux of the whole position. The wholesaler does take all responsibility for the goods he sells. There are many chemicals of which he is not a manufacturer, but in every instance the scientific, up-to-date, semi-professional (if I may use the word) wholesale druggist examines these, and takes on his own shoulders the full responsibility, not relying on the warranty of anyone."

This illustrates the position, but indicates also the *raison d'être* of the wholesaler. As a manufacturer his *raison d'être* is obvious; while by virtue of his buying, sorting, bulking, sampling, analysing, and occasionally rejecting he becomes a kind of clearing house between the pharmacist and the producers, the latter of whom are frequently foreigners, not amenable to the Sale of Food and Drugs Acts.

The tendency to put commercial qualities of common chemicals to uses for which they are neither intended nor fitted (i.e., pharmaceutical uses) was deprecated by the author as being fraught with danger to pharmacists. The Birmingham prosecutions relating to arsenical borax are a good example. Wholesalers are asked sometimes, with nauseating iteration, "Is your commercial quality of so-and-so B.P.?" Probably what the questioner really means is, "Will it fulfil the requirements of the Food and Drugs Acts?" How can the wholesaler fulfil his proper function and sell a commercial quality of a chemical as B.P.? In order that he may be in a position, with due regard for his reputation and his pocket to guarantee such an article as borax, for instance, it is clearly necessary that each cask should be sampled and submitted to thorough analysis. In this connection Mr. Hill quoted his remarks in the *C. & D.* of July 5:

"Wholesale druggists cannot with reason be expected to sample and analyse and guarantee every cask or package of a commercial article bought and sold at the price proper for a commercial quality."

The wholesaler is faced with a further difficulty, for the pharmacist places upon him the onus of forming his own estimate of what will answer the Food and Drugs Acts, and (assuming the Pharmacopoeia to be the standard) to interpret what will be held to be in compliance with the unexpressed or ill-expressed intentions of the



Mr. C. A. HILL.

peculiar to the wholesaler.

compilers of that work. It is this lack of definite knowledge as to what really is the standard which has made vexatious prosecutions possible. What worries a wholesaler is not compliance with a severe standard, but compliance with an unknown standard; what he asks for is definiteness.

In order to remedy this state of affairs pharmaceutical manufacturers (if this title be permitted) have, out of self-defence as much as from altruistic considerations, given much time towards recommendations for the forthcoming edition of the Pharmacopœia, which are all in favour of greater definiteness. The formula "Guaranteed B.P." may then have a meaning: at the present time it is impossible to say, in many cases, what constitutes the standard "B.P." Moreover, as things are now, a substance may fulfil the requirements of the Pharmacopœia and not those of the Food and Drugs Acts. Mr. Hill is not in favour of too stringent requirements, but if by any chance they are made too stringent, surely the retail pharmacist is the last person who ought to complain—rather the wholesaler who has to find such products, and the manufacturer who has to produce them. A large number of tests in an official monograph does not necessarily involve greater stringency; it does not mean that the pharmacist is to be called upon to supply a substance fulfilling the ideals of some visionary dreaming in an armchair; but what it does or should mean is that the proper substance has been carefully and adequately characterised. The desirability of having pharmacopœial limits fixed for an impurity such as arsenic is brought home when one considers that, in the absence of an authoritative standard for drugs, a proper limit for arsenic in some undoubted drugs might be held to be $\frac{1}{1000}$ grain per lb. (1.4 part per million—the accepted recommendation of the Royal Commission on Arsenical Poisoning), on the ground that they enter into articles of food.

With the inclusion in the Pharmacopœia of definite standards of purity, vexatious prosecutions in official articles become impossible. Without imputing fault to public analysts the author recalled one "vexatious" instance in which a pharmacist was called upon by the local authority to explain the sale of cream of tartar which was certified by the public analyst to contain lead to the extent of $\frac{1}{70}$ grain per lb. (2 parts per million), showing what injustice can be done by a false interpretation of a public analyst's certificate by the municipal or lay mind.

Concentrated infusions and decoctions are now so familiar that one is apt to lose sight of the small departure from rigid accuracy involved (i.e., the unauthorised addition of alcohol) in using them in place of the freshly prepared official preparations which they are intended to represent; for, although "nine of the more successful have been admitted into the Pharmacopœia as *liquores concentrati*, and the products of their dilution with water may be prescribed by practitioners in place of the corresponding official infusions," there is no licence to make such dilution *in situ* when the fresh infusion figures in a prescription. The demand for concentrated preparations arises from considerations of convenience, for theoretically they should work out somewhat more expensive than the official preparations. Some concentrated infusions very fairly represent the fresh preparation, and when they contain at least 20 per cent. of alcohol (by volume) they keep well, but considerations of cost have led to the appearance of very inferior and undesirable preparations—not only decoctions and infusions, but tinctures also. The demand for concentrated tinctures for export purposes is reasonable, seeing that a considerable saving in expense may be effected by importing tinctures in this form into countries where the duty on spirit per liquid gallon is very high, but for home trade it is difficult to see any valid reason, for if properly prepared they must work out more expensive than the B.P. tinctures. It is not uncommon for a manufacturer to be asked to supply a liquor concentrated 1 to 7 when 1 to 3 or 1 to 4 is the utmost degree of concentration possible, and it is to be feared that such abnormalities are not unknown in wholesale price-lists.

In many cases the preparation resulting upon dilution of its concentrated form is deficient in flavour, aroma, or other qualities, while some contain ingredients amenable to chemical determination. Prosecutions have taken place in respect of dec. aloes co. (either improperly prepared or improperly diluted), and the present-day excessive demand for concentrated galenicals, and its relation to the subject under discussion, certainly seems to invite careful reflection.

With reference (the question of warranty quite apart) to the delicate possibility of direct conflict between the seller and his wholesale supplier on a question of fact, Mr. Hill said such conflicts are unknown, which is a matter for congratulation, and a good testimony to the excellent relations subsisting between these two sections of the craft. If a retailer receives a summons in respect of a sale made under the Acts, and states that he purchased the article from a certain wholesaler, and can show that he has received a supply of that article from that wholesaler, that is *prima facie* evidence of the truth of his contention, and the onus of disproving it falls upon the wholesaler. Were such a case to arise, the wholesaler would doubtless rely upon his analytical records and other books to show the quality of the article which he actually had supplied to the retailer.

Again, a dispute between wholesaler and retailer might quite conceivably arise if the retailer purchase a standardised galenical preparation and prepare from it another official preparation, and the latter become the cause of a summons under the Acts. Suppose, for example, tinct. ferri perchlor. P.B. be purchased by a food and drugs inspector, and be found, upon analysis, to be deficient in iron, the pharmacist may be inclined to lay the blame upon the liquor ferri perchlor. fort. purchased from his wholesaler, affirming that he prepared the tinctures by dilution of the liquor in strict accordance with the directions of the Pharmacopœia. Other and similar instances are vinum ipecac. made from ext. ipecac. liq., and tinct. nucis vom. made from ext. nucis vom. liq.

The question of deterioration sometimes arises and has to be considered, as in such articles as spt. ather. nit., hydrogen peroxide, ammon. carb., pulv. rhei co., Bland's pills, and certain essential oils, and it is here that one might expect a possible source of dispute between wholesaler and retailer. Here again the wholesaler would have to rely chiefly upon circumstantial and well-authenticated analytical records. It is to be noted that when relying upon a warranty the onus lies upon the seller to prove that the article sold is in the same condition as when received.

III. The Public Analyst's Point of View.

By EDWARD HINKS, B.Sc. (Lond.), F.I.C.,
Public Analyst for the County of Surrey.

LOOKED at strictly from the public analyst's point of view, the Acts in respect of drugs can be narrowed down to Section 6 of the 1875 Act: that no person shall sell to the prejudice of the purchaser an article not of the nature, substance, and quality demanded. This leads at once to the vexed question of the Pharmacopœia. With regard to compounded medicines there must be some authority that shall lay down for a given article the proper constituents and their proper proportions. No individual can do this; he cannot by himself produce evidence that will satisfy a court of justice what is the correct nature, substance, and quality of a compounded drug. Whatever the purpose of the Pharmacopœia, it is, as the law stands, unless other very strong evidence be adduced, the standard with which drugs named in it must comply. The author proceeded



MR. E. HINKS.

to speak about the Pharmacopœia and what it contains and does, gradually leading up to the fact that the Local Government Report has thrown its tests over as regards presence of lead and arsenic in citric and tartaric acids and cream of tartar, limits laid down by the Arsenic Commission and the Department officers being preferred. The author then spoke of the constituent parts of compounded medicines as prescribed by the B.P.—*e.g.*, *tr. opi*—summing up the whole position by saying that his conception of the correct procedure for the public analyst is that, before giving his opinion as to the genuineness or otherwise of a drug, he should have regard to the Pharmacopœia, keeping in mind its known faults and consulting other authoritative works and decided cases. Moreover, if analysis shows the article to be not what it purports to be, no matter how many official tests it may comply with, the article must be condemned.

For the analyst the greatest difficulty is, and will remain, the analysis itself. For the detection and estimation of definite chemical substances there are well-established methods giving satisfactory results. That is not the case, however, with others, such as powdered and mixed drugs, the active principles of which have not been isolated. With extracts the position is even worse. Sophistication may be suspected, but cannot in many cases be proved. The author pointed out the public analyst's special difficulty here—his certificate must set forth the constituent parts of the article analysed or the percentages of foreign ingredients. Without these legal proceedings cannot be taken. The only way of escape from this obligation is the legal standardisation of all articles—a highly contentious question, too large a one to argue on this occasion. Mr. Hinks also referred to the difficulty of establishing the legality or otherwise of some particular practice. In order to attempt to establish a new one, some person has to be prosecuted, and the public analyst may find himself in the position of having to initiate a "test-case." This may involve hardship and expense for individuals, and also for the prosecuting authority. It also, he pointed out, casts a slur upon the defendant, and there is lack of uniformity in the decisions. He referred to the reports prepared by the L.G.B. inspectors of food, which have not the force of law, but in practice their recommendations are accepted by the courts and by the majority of traders. Referring to the alterations desirable in the Acts, Mr. Hinks spoke of the need for increased facility for taking samples on delivery and in transit, and bringing the wholesale business within their scope. Finally, he claimed that the Acts are necessary in respect of drugs, and although alterations are required, the Acts have done great service, being administered without harshness, and afford protection to the consumer and the honest trader.

IV. The Retailers' Point of View.

By J. P. GILMOUR.

THE author received from retail pharmacists in England, Scotland, and Wales particulars regarding the sampling that they had experienced, but none from Ireland. Opinions were also received, and all were treated under four headings in his communication.

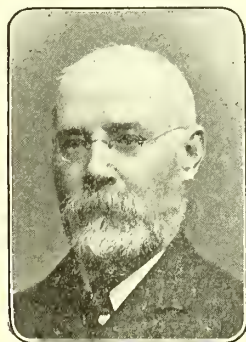
The first, as to *collection of samples*, commented favourably on how inspectors do their duty; but one correspondent thought that division of the sample should not be done in the presence of other customers. Under the second heading the *selection of samples* was dealt with, the author dividing his data into (1) constants of higher frequency, or drugs common to all the contributing lists; (2) constants of lower frequency, or drugs common to some of the lists;

(3) casuals, or drugs occurring only once on a few lists. The figures were necessarily of a more fragmentary character than those published by the Local Government Boards of the three countries (see *C. & D. Diary*, 1913, p. 231). They embraced 28 drugs in the most frequent classes, 12 in the less frequent, and 80 casuals, or 120 drugs altogether, being 13.12 per cent. of the 815 B.P. drugs and preparations. The correspondents, with one exception, approve of the British Pharmacopœia as a standard for pharmacopœial drugs and preparations. The exception is of opinion that the B.P. bristles with technicalities which have the effect, either by design or accident, of trapping the wary as well as the unwary pharmacist. He suggested that, before final revision, proof-sheets of the next B.P. should be submitted to local Associations, so that it may be adjusted to the every-day requirements of the pharmacist behind the counter. The B.P. as a standard is only accepted, however, with certain reservations. The general view is that it should apply only to pharmacopœial drugs, etc., for medicinal use, but not to similar substances for economic use—*e.g.*, ammon. conf. and chloride of lime. There is also a strong objection to the acceptance of B.P. tests and requirements as decisive in cases where it is demonstrable that these are inaccurate or inadequate—*e.g.*, *ol. juniperi* and *ol. olive*. Finally, there is an even stronger feeling against the unconscionable stringency of the standard for the limits of lead and arsenic, which seem to be based on an estimate for the consumption of beer rather than of drugs, which are used in what by comparison are infinitesimal quantities. This is a refinement which presumptively affects the manufacturer more than the retailer, but, as witnessed by the Hanley prosecution, the latter may be unfortunately involved in this connection.

In speaking of prosecution procedure and court practice, the author submitted the following table, based upon the number, etc., of drug-samples collected by the Public Health Department in an urban district with a population of 800,000, served by 200 retail pharmacies and 175 drug shops, for the quinquennium 1907-1911:

Article	Collection		Total	Adulterated	Conviction
	In-formal	Official			
Arrowroot	—	64	64	—	—
Beef-juice	2	—	2	—	—
Castor oil	2	—	2	—	—
Citric acid	—	1	1	—	—
Cod-liver oil	1	—	1	—	—
Cream of tartar	—	114	114	6	1
Essence of beef	3	—	3	—	—
Ext. malt	11	—	11	—	—
Fluid beef	4	—	4	—	—
Ground ginger	—	95	95	—	—
Honey	1	—	1	—	—
Lard	—	110	110	1	1
Linseed, crushed	—	68	68	—	—
Malt vinegar	—	23	23	—	—
Milk of sulphur	—	48	48	1	—
Mustard	—	2	2	—	—
Camphorated oil	—	79	79	5	2
Olive oil	—	53	53	1	nil
Salad oil	—	3	3	—	—
Peptonised beef-jelly	1	—	1	—	—
Quinine wine	1	3	4	—	—
Spt. aeth. nit.	—	6	6	1	1
Tartaric acid	—	87	87	1	1
Tinct. iodi	—	30	30	7	5
Totals	26	786	802	23	11
Average number collected per annum			112.23		
Percentage adulterated			2.85		
Percentage of convictions on total number of samples officially taken			1.4		

Court Practice.—In Scotland cases under the Food and Drugs Acts are heard before a Stipendiary Magistrate sitting in the Police Court or before a Sheriff (the Scottish equivalent to an English County Court Judge). As, owing to the redundant judicial wisdom of the sons of the tribe of Baillie Nicol Jarvie in Scotland, they have no use for professional police court Judges, there is only one Stipendiary in Scotland, who has his court in Glasgow.



MR. J. P. GILMOUR.

drugs common to all the contributing lists; (2) constants of lower frequency, or drugs common to some of the lists;

Therefore, the few cases that are heard are invariably taken before the Sheriff. But the English practice of taking these cases in the police court is keenly resented by many correspondents, who consider it an indignity. These remonstrants demand a reform of court practice in this respect, so that the defendant should not be treated as if he were a petty criminal, but rather as if he were defendant in a civil action.

There is complaint of occasional lack of specification in analysts' certificates. It is suggested that before any proceedings are taken the second sample in the possession of the Public Health authorities should be sent to Somerset House for analysis, a prosecution only to take place if the results of the two analyses are concordant. When this has been done at the request of the defendant, it has frequently happened that the Somerset House certificate has vindicated the purity of the sample.

It is felt to be a great hardship that when the prosecution fails or the summons is withdrawn, the defendant must nevertheless pay his own costs. In a recent case in the North of Scotland, although the defendant was acquitted on a Somerset House certificate, he had to defray the costs of the defence, amounting to 17*l.* 11*s.* 1*d.*, besides having to bear all the suspense and notoriety associated with the proceedings, for which even the payment of his expenses by the prosecutor would have been no compensation. The Judge ought to have discretionary power to treat every case on its merits, so that the innocent may not be penalised.

A review of the situation drives one to the conclusion that for the great body of retail pharmacists the Acts might be a statute of Mars. This is so because

(1) The conditional acceptance by the Bench of the invoice-warranty has relieved the pharmacist of personal responsibility, and

(2) Because the average retail pharmacist now buys his galenicals, even unto camphorated oil and lime-water, instead of making them on the premises. Accordingly, he sits secure in fancied impregnability, fortified by paper battlements of invoice-warranties and insurance-policies, which may shelter him from the assaults of the enemy and even enable him to repel them and win him a war indemnity.

But what indemnity is there for the havoc wrought upon a good name and the loss of business which even victory often entails? The public has a long memory for evil, real or imputed.

DISCUSSION.

Dr. McWALTER, in opening the discussion, gave it as his opinion that nothing had done so much to secure the purity of drugs as the Acts which had been so severely dealt with. He would be affronted if anyone called him an old man, and yet he had a distinct recollection of what happened fifteen years before the evolution due, in large measure, to the Acts they were discussing. At that time the standard of purity in drugs was very far below the one now commonly recognised by the authorities. At the same time he very greatly feared that the improvement was not due to any great delicacy on the part of the pharmacists of the country. (Laughter and cries of "Oh!") That was his opinion. It might be that his conscience was so elastic and that his fear of public exposure so acute that he judged people by his own standard. (Laughter.) Of this he was absolutely certain: that the standard of purity of the more common things—cream of tartar, liquorice, and a host of others—is infinitely better than it was even in such a comparatively recent period as 1897, when he first attended a meeting of the Conference. Therefore they were not to blame the Acts. No doubt a serious matter had now come to pass in connection with the Insurance Act. The desire for cheap drugs might possibly take from the ordinary retailer his great zeal for dealing with the wholesaler on whom he can rely. There would be competition among the wholesalers, and when this took place the standards of purity were let down. One point had been overlooked by the readers of the papers was that no reference had been made to bacteriological purity.

Mr. T. M. CLAGUE, dealing particularly with the awarding of expenses in unsuccessful prosecutions, said that in

England the magistrates might not possess that excess of legal wisdom possessed by their Scotch friends—(laughter)—but they had a fair predominance of common-sense. (Applause.) In common fairness, where the inspector and the public analyst were obviously wrong, and were proved to be wrong, costs were given against them, and the defendant was not asked to pay them. (Applause.)

Mr. H. KEMP (Manchester) gave it as his opinion that the Acts require revising and bringing up to date. Things which had been done in the past, and which had been condemned either openly or tacitly by the authorities, should be removed, and hardships which had been inflicted in the past should be made impossible in the future. (Applause.) In justification of this conclusion, he mentioned that the public analyst, as far as possible, refused to deal with any difficult problems brought before him. In proof of this, he mentioned that, as Secretary of a Pharmaceutical Association, he directed attention to instances in which paregoric and other preparations supposed to contain opium, but which did not, were openly sold by unqualified persons. The Pharmaceutical Society could not take action against the parties for the sale of poisons, but their other course was to ask the local authorities to take proceedings under the Act for the sale of drugs which were not of the nature, substance, and quality of those demanded. The inspectors reported that they had been unsuccessful in obtaining a single case on which proceedings could be taken. He then personally took action, obtaining no less than six samples which did not contain a trace of opium. When they considered the methods adopted by the average inspector, there was no great surprise at this. (Applause.)

Mr. BULLEN complained that the Acts, in their operation, are restricted to the sale of food and drugs, and do not cover their distribution. He advocated their amendment by giving to officers access wherever food and drugs are being distributed. It was more important, he added, that the pauper or the hospital patient should get pure food and drugs than, perhaps, the person who bought them over the counter. (Hear, hear.)

Mr. E. W. POLLARD remarked that there were pharmacists in Australia who said they had not had samples taken in fifty years. (Laughter.) Different was this from the position of the pharmacists in some parts of this country, who, called upon by inspectors on, say, a Saturday night, their busiest time, were asked to dispense a prescription or to supply a sample. The inspectors insisted on waiting for what they asked. This proceeding he regarded as a distinct attempt at a catch. (Hear, hear.) It had been reported, as things are in small towns, that out of six samples of dispensed prescriptions not one was accurate. They could not get accuracy to 3 per cent. under the Insurance Act. In solutions of different strengths it was said they could not expect to get within 5 per cent. of accuracy. (Cries of "Oh!") He inquired whether there was any agreement among public analysts as to a limit of accuracy.

Mr. R. A. ROBINSON, jun., asked who was the ideal person to decide what drugs should be taken for the purpose of analysis. He could not help thinking that it was a person with a pharmaceutical training. (Hear, hear.) He was not at all certain that the majority of those who at present take samples have sufficient pharmaceutical training to enable them to decide satisfactorily what samples of drugs should be taken. "Believe me," he went on, "the ordinary local authority is very often at its wits' end to know what samples it should take. The man who visits most chemists' shops in the country with a prescription is a marked man the moment he enters the door. To my mind, no local authority will be sufficiently doing its duty unless it proceeds to take Insurance prescriptions on the green slips into the chemists' shops. (Hear, hear.) I do not know if that has been done so far, and I am not quite sure what the arrangements would be for payment or otherwise if they did take them in, but I lay it down as a serious proposition, and I think, in the public interest, everyone will agree, that it should be adopted." (Applause.) Proceeding, Mr. Robinson said it did not seem that prescriptions form anything but a small percentage indeed of the drugs commonly sampled.

The question of warranties would not arise, and he did not think any pharmacist would really mind his dispensed prescriptions being more frequently tested. He could not speak for any local authority or for any public analyst arbitrarily fixing 10 per cent. as the limit of error in any sample he would pass, but he could not conceive any analyst who knew his job doing anything of the kind. He was interested to hear Mr. Hill say that what the wholesale chemist wants is more definiteness as to the standards of samples. But there was here a danger. If they took a fairly low average, people worked down to the bare minimum. This applied to milk, for which a low standard was fixed; and it might also apply to drugs. Concluding, Mr. Robinson agreed that a police court is not the place to which to take a pharmacist. None, he added, recognise this more than the officers of a local authority. It is true that the Acts need amending in many respects. (Applause.)

The CHAIRMAN at this juncture reminded the meeting that there is in existence a Joint Committee of the Society of Public Analysts and the Pharmaceutical Society, to whom matters of difficulty arising under the Acts are referred. The committee, he went on, had had several difficult cases to deal with within the past two or three years, in which it had been decided that prosecutions, under the circumstances, would be vexatious. To that committee such problems as those to which allusion had been made would be referred.

Mr. D. LLOYD HOWARD commented on the great difficulty attaching to the administration of the Food and Drugs Acts. As the law at present stands, he said, an offence against the Acts is a criminal one, and must be punished as such. It was quite obvious that the man who sells, for instance, *santonin* which contains 98 per cent. boric acid was worthy of being prosecuted as a criminal. (Hear, hear.) But that sort of thing was very unpopular in this country, although it was common in India, where a strong Food and Drugs Act is strongly lacking. A great difficulty stood in the way of magistrates, in so far that while they are men of high intelligence, and still higher ideals, who take their work seriously, and are anxious to do their duty, they, in the majority of cases, possess no scientific knowledge. (Applause.) In particular they have no knowledge of chemistry or of pharmacy. Consequently they have great difficulty in understanding the public analyst's certificate, especially when it raises, not a question of what is ordinarily known as adulteration, but the passing or not passing of a certain fixed standard of impurities. The great difficulty in adopting the B.P. under the Sale of Food and Drugs Acts was not that the standard it gives ought to be a high one—as high as could be obtained. It was one thing for a man to try to keep up to a particular standard, but quite another to say that the man was a criminal if he did not always attain to that standard. (Applause.) Taking the case of lead, Mr. Howard pointed out that the Local Government Board had fixed a standard of twenty parts of lead to a million parts of tartaric acid. Supposing, he said, a case were brought into court where the proportion was forty parts of lead to a million of tartaric acid. It would be put before the Bench that lead is a noxious impurity. They were not told, however, what was the minimum or maximum medicinal dose of lead; nor were they informed that the proportion was only something like one grain to three and a half pounds. They were left without the means of judging whether the consumer was likely to get a medicinal dose of lead, say, in six months from the consumption of the tartaric acid. It was essential that fuller information should be given to the magistrates in food and drug cases, for at present they are accustomed to lean so much on experts. When a magistrate had to try a case of the kind he depended exclusively for the science he did not understand upon the public analyst's certificate. At the same time, it is difficult to suggest a remedy.

Mr. HERBERT KNOTT (Bolton) thought that under the Insurance Act pharmacists occupy different ground from what they did previously. It occurred to him they might look forward to the time when they should have

a staff of Government inspectors in pharmacy. In that event they might have their cases taken, not *in camera*, but before a Government Department. If they were able to prove that a case was the result of some accident, or of a slip, the matter would go no further. It would be better if affairs could be arranged in that way than being brought before the police court.

Mr. MITCHAM made a few observations, the purport of which was not clearly heard by the reporter.

Mr. ANTCLIFFE, dealing with the contention of a previous speaker that a public analyst and inspector under the Acts should have tenure of office, said that it would be difficult for either of these officials to take up cudgels against a man who happened to be a chemist and also a member of the local authority employing them. If such officials were removed from local control it would be far better for the public. So far as public dispensing was concerned, he was of opinion that the body controlling the dispenser and the dispenser himself should be criminally prosecuted in cases where they distributed adulterated drugs.

Mr. WELLS, referring to the inquiries sent to him by Mr. Gilmour and to the replies he sent, stated that as a result of his investigations he found that during the first quarter of the year ninety samples of drugs were taken in Dublin, and that of these only three were condemned. (Applause.) He believed that in Belfast the result was very much the same. In the Pembroke district a lot of samples were taken during the past two years, but not a single one was condemned. Of course, the fact of his living there might account for this. (Laughter.) He did not regard warranties as some do, for the reason that it was most difficult in the majority of instances for the local authority to get at the firms issuing them. There was great reason for the Acts being further amended, and for some standard of quality to be fixed for drugs. Throughout the rest of Ireland it was the police sergeants who carried out the prosecutions, but he did not think they are the men to whom such work should be entrusted. (Hear, hear.) The Castle authorities did not encourage the police to carry out the Poisons and Pharmacy Laws, or the Food and Drugs Act, with the result that in the majority of instances the former were a dead letter, while the latter was much the same. Concluding, Mr. Wells expressed the view that dispensing in public institutions, hospitals, and doctors' surgeries should be under some supervision. (Hear, hear.)

Mr. CRIPPS (Brighton) advocated the taking of unofficial samples. The inspector, he pointed out, is frequently known to the local people, and for this reason a deputy should frequently be employed for the taking of unofficial samples. If the first three or four purchased were found to be correct, and the man had thus proved himself to be honest, he might be left alone. (Hear, hear.) By this means the dishonest, whom they all desired to catch, would be more readily detected. Mr. Cripps complained of the "terrible ignorance" of certain magistrates. "It is absolutely impossible sometimes to get into their heads the difference between an adulterated article and a pure one," he said. In support of this view he instanced a case where a man, summoned for selling lime-juice cordial for lime-juice, was let off by the magistrate, although he pleaded guilty because "he did not know any better." (Laughter.) And yet the man had been selling the stuff for ten years! Spirit of nitre is an article which considerably deteriorates in value. If a sample were found to be below strength, the right and proper course would be to warn the vendor to keep the article under the best possible conditions. If he continued to sell it under strength they would then know he was careless, and careless pharmacists ought to be punished. (Applause.) He had never heard of any agreement between public analysts as to standards such as had been suggested by Mr. Pollard.

Mr. FINNEMORE, replying to the point raised by Mr. Pollard as to the visits of inspectors at inconvenient times, suggested that the experience was not a frequent one, but that it might be avoided by the facts being

explained to the official. Dispensing should not be done in bottles, and inaccuracy should in all instances be taken into consideration. So far as the sale of paregoric and kindred preparations was concerned, difficulties such as those related by Mr. Kemp would be got over if the Act were so amended as to give the officers of local authorities power to search for and take possession of any drug of the quality described. (Applause.)

Mr. E. F. HARRISON suggested that the discussion should have some practical issue, and said that it was rather important that they should consider what they should do as regarded the future. It seemed to him that one general consideration emerged from the discussion, and that was that in all matters relating to the Sale of Food and Drugs Acts the pharmacist should take a larger part in their administration. Mr. Hill had pleaded, on behalf of the manufacturer, for more definiteness in the requirements of analysts, but he had to remind them that very often the public analyst is frequently in a worst quandary to know what is actually required. One remedy for this is that pharmacists should, as far as possible, become public analysts. It is a common experience in Bloomsbury Square for students to work on further and to take the Institute of Chemistry qualification, and consequently there is a considerable number of pharmacists who are qualified to act as public analysts. Mr. Harrison also urged that pharmacists should endeavour to get as many of their number as possible elected to public bodies, and also appointed to the Bench, so that their advice could be easily made available in the public interests. They had the remedy for grievances largely in their own hands. (Applause.)

Mr. CAMPKIN, dealing with the taking of unofficial samples, said that some of those who, like himself, sat on the Bench knew that as a matter of fact a good many of them were taken. He did not remember a case of the adulteration of drugs having come before him during the twenty years he had been on the magisterial Bench, and yet he knew of many samples having been taken. He agreed that there should be sufficient oversight, even in the distribution of drugs. The more penal the consequence of offending against the Acts, the more difficult it was to apply them.

REPLIES TO DISCUSSION.

The CHAIRMAN stated that there had been sixteen speakers since the readers of the papers addressed the meeting. The discussion had been instructive, and he called upon the readers to reply.

Mr. GADD, replying to Dr. McWalter, said that bacteriology is a science somewhat in its infancy, and he should not like to accept any bacteriologist's standard as *ex cathedra*. The case was one which could only be dealt with by reference to a competent board. Such a board was imperatively needed. He had been asked if ethyl nitrite could be added to sweet spirit of nitre which was weak. Personally he was not in the habit of giving gratuitous opinions on chemical questions. (Laughter.) If he were an honest man—(renewed laughter)—selling something which he honestly believed to be correct, but which he knew could be made cheaper, he should dodge any public official who was trying to entrap him. (Laughter and applause.)

Mr. HILL said that the question of warranties was bound up in the fact that the onus lay upon the seller to prove that the article when sold was in the same condition as when it was received. There were two questions with which he had desired to deal. One was the duration of a warranty, which was a very important point, and the other was the possibility of having an Act relating to the sale of drugs quite different from one dealing with the sale of foods.

Mr. GILMOUR took up Dr. McWalter's point that the under-remuneration of pharmacists under the Insurance Act might lead to the substitution of inferior drugs. There was a double protection against this, he said, apart from the honourable traditions of the profession, which had been pointed out to the Insurance Commissioners. One was that the Food and Drugs Acts were

as applicable to dispensing under that Act as to any other. The other was an express agreement with the Commissioners that the pharmacist, as a contracting party, would supply drugs of good quality. These he regarded as adequate safeguards. Then, as to prosecution for deficiencies of an active ingredient in prescriptions, it was explained to the Commissioners that in dispensing operations it was necessary to make up the mixture in a graduated stamped measure, and that if even solutions were carelessly made up there was little risk of there being any discrepancy. There was, however, a danger in using cheap bottles, as a supposed eight-ounce one might only be capable of containing seven ounces. Dealing with Mr. Kemp's statement about costs in unsuccessful prosecutions, Mr. Gilmour described English law as being too complicated, it having come through the corrupt Norman-French. (Laughter.) He should be sorry to hear that a person could be convicted and penalised on merely a moral certainty. He noticed from the table attached to his paper that the number of official samples taken in England generally, with the exception of Birmingham and Wandsworth, was exceedingly small.

Mr. HINKS remarked that the Joint Committee of Public Analysts and Pharmacists referred to by the Chairman, however valuable it is in settling difficulties, could not take the place of a Committee of Reference such as was advocated. There had been charges of scandalous mistakes being made by public analysts, but he did not think that the mistakes could be so described. There had been mistakes under the Act, as there must be at times under any Act of the kind, but it frequently happened that certain proceedings were regarded as mistakes which were not. In answer to Mr. Robinson's contention that public analysts should be pharmacists, Mr. Hinks pointed out that on the same theory that official should also be an expert in the manufacture of every article of food which was also dealt with by the Act. With regard to the question of specific limits of error in dispensing, he was not aware that any one agreed upon by analysts existed. At the same time he regarded a 10 per cent. limit as rather high.

THE CHAIRMAN SUMS UP.

The CHAIRMAN, having thanked the Conference for the honour done him in asking him to preside on the occasion, and commented on the value of the papers and of the discussion, said the State had taken over the control of the purity of food and drugs in this country. Like many things which the State does, it had done so in a slipshod and unsatisfactory manner. (Applause.) Of course, the country was all the better for the administration which had taken place, but no one, from the points of view of administrator, defendant, or the general public, could be satisfied with the existing state of the law. (Hear, hear.) The main provision of the Food and Drugs Acts was that the purchaser of a food or drug should get an article of the nature, substance, and quality of the one demanded. But its framers never worried themselves as to who was to decide what was the "nature, substance, and quality" of the article that the customer demanded. He had come across a public analyst who had taken quite a peculiar view of this provision. It was inevitable, he supposed, that scientific attainment sometimes led one to overlook the common-sense point of view. "It was my business on one occasion," proceeded the Chairman, "to defend a case where a chemist was asked by a purchaser for carbonate of soda, and he had the infamy to supply bicarbonate of soda. Upon the certificate of a public analyst, that man was prosecuted; and it came to this, that the analyst in Court practically said, 'Well, if the man wanted bicarbonate of soda he ought to have asked for bicarbonate of soda.' (Laughter.) Then I said, 'It is the man, then, who ought to have been punished.'" (Applause.) The Chairman went on to say that he quite agreed that the present position as to standards is unsatisfactory. "It is inevitable," he remarked, "that if you have got to legislate for dishonest people and you have to set up a standard, you must, in doing it, in my view, do a certain amount of harm. You cannot set

up a standard which is not what is called a reasonable standard, and you do have a tendency to reduce the average quality of the articles sold when you have fixed a definite standard. Competition is such that the manufacturer or producer says, 'If that is the article which satisfies the law I cannot afford to give a better at greater expense.' It is inevitable, I agree. Then the B.P. has been laid hold of by the courts as a ready sort of makeshift in the matter of the standard. It is not, it is true, a legal standard, but Heaven help the defendant who has sold something by a Pharmacopœia name if it is not up to that standard—(laughter and applause)—because the position in law is that the obligation is upon him then to set up a different standard, if he can. He won't find it easy, and he certainly will not find it inexpensive." It was not right, the Chairman went on, to contend that the question of what the public mean when they ask for a certain article—in point of nature, substance, and quality—should be settled at the expense of one particular authority, or any particular trader, or any particular class. (Applause.) That was a matter which ought to be settled through a proper Board of Reference. Dealing next with the courts, the Chairman said it might be that a magistrate was the best possible person to decide whether, in fact, a person was drunk the night before, but he was not the best judge to decide between conflicting interests as to the purity of cod-liver oil. (Laughter and applause.) It was not fair for a pharmacist to have to stand in the same place and be treated in the same way as a person who had broken the law in a direction of which he ought to be ashamed. (Applause.) Concluding, the Chairman expressed the hope that at this critical stage, when the eyes of the public were turned upon them in a way they had never been before, pharmacists would not, while on the one hand claiming privileges superior to the retailer of an ordinary commodity, on the other say "We will also be like him and take no responsibility." The failure to supply an article of the nature, substance, and quality was more or less a criminal offence unless a warranty defence was put forward. He hoped to see such a change in the administration of the law as would make it right and just that if the pharmacist did not sell the article which it was purported to be he must take the responsibility and meet with suitable punishment. (Applause.) Alluding to dispensing under the Insurance Act, he said there was no such thing as special Insurance lists. Public Insurance dispensing had got to be dispensing, and if it was not—well, it would be their own fault, and they would lose the position they had gained. "I was glad," he said, "to hear Mr. Robinson suggest that in some way or another Insurance dispensing should be tested like all other dispensing. I hope it will be done by every local authority." He thanked the readers of the four papers, and assured them that the outcome could not but be to the benefit of the pharmacist and the public. (Applause.) The meeting concluded a few minutes after five o'clock.

SECOND SCIENCE SESSION,

Wednesday, July 23.

BETWEEN twenty and thirty members were present at 10.10 A.M. on Wednesday morning when the President called the meeting to order. The past-Presidents on the platform included Dr. C. Symes, who was unable to be present on the previous day. M. Fournéau was also on the platform. The first paper taken was

Analytical Notes on Extract of Male Fern.

By C. A. HILL, B.Sc., F.I.C.

MALE-FERN EXTRACT came somewhat prominently into notice about three years ago, adulteration with castor oil being then rife. Mr. E. J. Parry drew attention to this adulteration in 1911 (*C. & D.*, 1911, II., 727 and 860), and gave analytical data for the extract, pure and adulterated, showing how the addition of castor oil affected its physical characters. The author has had occasion during the last three or four years in the

examination of a considerable number of extracts to try and compare different analytical methods.

A summary of the chief results obtained from genuine extracts of foreign importation with those afforded by extracts prepared in the laboratories of The British Drug Houses, Ltd., is set out in table in order that they, along with corresponding figures obtained by other analysts, may be available for characterising as closely as possible this somewhat important extract, especially desirable as a new edition of the British Pharmacopœia is in course of preparation.

TABLE 1.

Sample	Specific Gravity	Refractive Index	Loss on Drying at 100° C.	Petroleum-ether Test	Crude Filicic Acid	Potash Extract	Potash Insoluble
1	0.998	1.4869	—	74	13.2	—	—
2	1.0036	1.4940	—	35	19.3	—	—
3	1.0075	—	—	15	23.75	—	—
4	1.0065	—	—	16	22.65	—	—
5	0.9944	1.4925	5.22	3.2	30.22	—	—
6	1.0045	1.4935	3.63	4.3	23.1	—	—
7	1.0109	1.4965	2.44	—	24.55	—	—
8	0.9985	1.4960	4.64	2	24.5	42.5	46.86
9	1.024	1.5025	—	8	29.75	—	—
10	1.0233	1.4922	6.6	9	25.15	42.5	50.9
11	0.998	1.4915	4.4	11.5	21.6	37.9	57.7
12	1.009	1.4865	3.65	7.5	22.0	42.95	53.4
13	0.9829	1.4823	5.03	60	11.6	21.43	73.54
14	1.0235	1.5066	2.69	7	25.27	39.5	57.81
15	1.0006	1.4874	2.57	65	14.1	27.13	70.3
16	1.019	1.4988	4.57	5	27.1	39.9	55.53
17	0.9850	1.4820	2.43	6	18.92	33.8	63.77
18	1.0179	1.4900	6.52	5	23.72	43.36	50.12
19	1.0000	1.4909	6.63	10.5	21.57	36.4	56.92
20	1.0249	1.5036	3.55	7.5	27.82	38.9	57.55
21	1.000	1.4915	4.23	1.5	20.67	37.62	58.15
22	1.0227	1.4990	6.5	10	22.1	46.24	47.26
23	0.9821	1.4880	4.84	12	18.1	31.53	63.63

Samples 1, 13, and 15 are adulterated, the last being of quite recent date. The samples numbered 8, 10, and 12 were of British manufacture, the remainder being imported extracts. Sample No. 11 was of an exceptionally bright green colour, and may have contained added chlorophyll. Some others also gave the appearance of having had colouring-matter added. The results go to show that an assay process for the determination of the filicic acid is of the first importance, and that this, taken in conjunction with physical and chemical constants for the genuine product, forms the best safeguard against adulteration. From a consideration of the results the following generalisations may be drawn:

Specific Gravity at 15°.—This is usually higher than 1. In extracts having a low sp. gr. the smell of ether is sometimes apparent. The addition of chlorophyll to improve the colour of the extract lowers the sp. gr.

Refractive Index at 40°.—This should not be below 1.49; in fact, it might be advisable to fix the limit slightly higher.

Loss on Drying at 100° C.—Commercial extracts always contain water, and occasionally traces of ether and alcohol also. The loss should not exceed 6 per cent., while 5 per cent. might perhaps be considered a sufficiently high limit.

Petroleum-ether Test.—The proportion, by volume, of extract remaining undissolved when the extract is mixed with ten times its volume of petroleum ether should not exceed 20 per cent. after centrifuging.

Crude Filicic Acid (Filicin).—As determined by the Swiss Pharmacopœia process, genuine extracts appear to yield anything from 19 to 26 per cent. of crude filicic acid. Samples containing more are occasionally met with; but the requirement of the Swiss Pharmacopœia (26 to 28 per cent.) appears to be too high, and 22 per cent. would be a fair average value for a genuine extract, with 20 per cent. as a fair minimum requirement, although unadulterated products may occasionally yield slightly less.

Potash Insoluble.—The portion insoluble in 1-per-cent. aqueous potash (obtained as explained below) is for genuine extracts fairly constant in the neighbourhood of 50 per cent.

In order to obtain the figures for "Potash Extract" and "Potash Insoluble," about 20 grams of the extract is dissolved in ether and repeatedly shaken with 1-per-cent. aqueous potash until nothing further is extracted.

The alkaline liquors are washed with ether, which is then added to the original ether solution and evaporated, dried, and weighed to give "Potash Insoluble." The alkaline solution is then acidified with hydrochloric acid and extracted with ether. The ether is evaporated off and the residue on drying and weighing gives the "Potash Extract." These two portions, together with "loss on drying at 100°," constitute practically the whole of the extract. Potash extracts much more than does baryta solution, even though it be as weak as 1 per cent.; in fact, the strength of the potash does not make so very much difference. The "Potash Extract" contains the filicic acid, and by exhausting this extract with baryta solution the same result is obtained as by acting on the original extract by the Swiss method. In the "Potash Extract" will be found any body of an acid nature added, as an adulterant, to increase the assay value.

The "Potash Insoluble" portion will contain practically the whole of any added fixed oil, and it becomes therefore of interest to examine this portion. Table 2 sets forth the analytical data relating to this portion as obtained from four extracts included in Table 1. Of these, sample 13 contained 59 per cent. of castor oil. Corresponding figures for castor oil are added.

TABLE 2.

Analytical data relating to "Potash Insoluble" portion of Extract of Male Fern.

Sample	Specific Gravity	Refractive Index	Saponification Value	Saponification Value after Acetylation	Acetyl Value	Hydroxyl Value*	Iodine Value
10	0.9387	1.4715	173.7	198.8	23.6	29.2	—
11	0.9340	1.4729	175.3	207.3	36.1	37.1	120.6
12	0.9372	1.4727	177.4	234.9	31.7	32.5	121.2
13	0.9555	1.4732	170.7	281.1	127.2	140.6	—
Castor oil	0.965	1.4720	182	308	149	167.8	80/90

* The hydroxyl value is the number of milligrams of potassium hydrates required to neutralise the acetic acid liberated upon saponifying the product of acetylation of 1 gram of the substance. It is calculated by the following formula from the acetyl value.

$$\text{H.V.} = \frac{\text{Ac. V.} \times 1000}{1000 - (\text{Ac. V.} \times 3)}$$

By making use of certain constants for this portion, as obtained from genuine extracts, the proportion of castor oil present in the adulterated samples can be calculated. Experiments, with mixtures of genuine extract and castor oil, made for the purpose of checking the validity of these calculations gave reasonably good results. In a genuine extract the "Potash Insoluble" portion consists almost entirely of tri-glycerides. The determination of glycerol by oxidation with potassium dichromate gave 10.04 per cent. of glycerol, against 9.6 per cent. calculated from the saponification value; the high result is due to the presence of other organic matter. The detailed examination of the "Potash Insoluble" portion has probably served its purpose, inasmuch as it would probably be possible to arrange a judicious blend of adulterants which would not only satisfy the characters for the "Potash Insoluble" portion but even such physical characters as sp. gr., refractive index, and petroleum-ether test of the original extract. Any such admixture, however, must lower the filicic-acid content, which is thus seen to be the best criterion. Indeed, if this is the ingredient upon which the usefulness of the extract depends, then it is no more than logical to assay the extract for this ingredient. The process of the Ph. Helv., which uses baryta solution (3 per cent.; i.e., saturated), seems to be the best. Lime presents no advantage over baryta, and has the disadvantage of insolubility. Magnesium hydroxide, used as a very thin emulsion, was found to give a very low result; while potassium carbonate extracts virtually the same amount as potash.

The results obtained on the same extract (No. 11

of Table 1) by six different alkaline reagents are shown below.

Alkali	Ba(OH) ₂	KOH 1%	KOH 6%	K ₂ CO ₃	Ca(OH) ₂	Mg(OH) ₂
Yield	21.6	37.9	38.8	37.6	20.0	13.6
(per cent.)						

Kraft's process is somewhat tedious, and until it has been shown that this determines the active body there does not seem to be sufficient reason for throwing over the simple process of the Swiss Pharmacopœia. According to Poulsen, male-fern extract contains active and amorphous filicic acid and inactive and crystalline filicin. Poulsen considers that filicin is the lactone of filicic acid. Kraft is in substantial agreement, but he regards these two bodies as being isomeric, and his assay process purports to determine this true filicic acid, which is stated to be present in genuine extracts to the extent of at least 5 per cent. It would seem best, therefore, to refer to the extractive weighed in carrying out the assay process of the Ph. Helv. as "crude filicic acid." Any ether-soluble body added to the original extract might fractionally increase the amount of crude filicic acid indicated. Thus chlorophyll itself indicated 1.5 per cent. and castor oil only 0.25 per cent.

Experiments are required to investigate the alleged deterioration of male-fern extract with age and whether such change materially affects the assay value of the Swiss method. It obviously seems desirable that the pharmacology of this extract should be adequately investigated. In the meantime the crude filicic acid as obtained by the baryta process of the Swiss Pharmacopœia should be characterised. In which connection a vendor's recent offer to supply an extract guaranteed to reach a certain standard "and to contain no added filicin" gives one furiously to think. Work in this direction is proceeding and it is hoped to publish it at a later date.

So that the two papers could be discussed together, the next paper was

Analytical Constants of Extract of Male Fern.

By E. F. HARRISON, B.Sc., F.I.C., and
P. A. W. SELF, B.Sc., F.I.C.

In a communication to the Society of Public Analysts on the adulteration of extract of male fern (*C. & D.*, 1911, II., 860), Mr. E. J. Parry laid down certain constants for this extract. In order to add to the available data in regard to genuine extracts the authors prepared eleven specimens of extract from different samples of commercial material. Nearly all the samples of rhizomes were supplied by H. Finzelberg's Nachfolger, through Messrs. A. & M. Zimmermann. The bases of the petioles were found to constitute 70 per cent. of the drug, but one specimen consisted of petiole bases only. The samples may be described as follows:

- No. 1. "Harz." Rhizome and bases of petioles; dark, but otherwise fair average specimen.
- No. 2. "Scharzwald, Württemberg." Normal.
- No. 3. "Bayern." Large rhizome with bases of petioles.
- No. 4. "Mosel, Rhein-Preussen." Normal.
- No. 5. "Bayern." Large rhizome with petiole bases.
- No. 6. "Harz." Small rhizome with petiole bases; dark.
- No. 7. "Harz." Normal.
- No. 8. "Harz." Rhiz. filicis crud. depurat. für feine Extracte." Petiole bases freed from rhizome, scales, and rootlets.
- No. 9. "Harz. Rhizoma filicis mundat. für allerfeinste Extracte." Petiole bases freed from rhizome and peeled, together with pieces of rhizome also peeled and cut up longitudinally; no scales or rootlets. In making the extract the bases of petioles and the rhizome were used in the proportions in which they were present in the whole specimen.
- No. 10. "Bayern." Large rhizome with petiole bases.
- No. 11. "Stockholm." Rather dark, otherwise normal.

The three samples of Bavarian rhizome, Nos. 3, 5, and 10, were too large to be covered by the description in the British Pharmacopœia, some pieces being 12 in. long. The first table on p. 183 summarises the yields of extract and analytical results.

The crude filicin was determined with baryta by the Swiss Pharmacopœia method. The two samples of drug which gave extreme figures for extract differed little in appearance, but came from different districts (Rhenish

Prussia and the Harz Mountains respectively). Extract No. 8, made from bases of petioles alone, gave figures within the extremes for other samples except saponification value, which was slightly lower than No. 2. Leaving

Sample	Yield of Extract per cent.	Sp. Gr.	Ref. Index at 20°	Saponification Value	Unsaponifiable per cent.	Insoluble in 10 vols. of Petroleum Ether per cent.	Crude Filicin per cent.
1	9.5	1.037	1.5120	251.5	6.5	5.6	27.7
2	7.5	1.037	1.5145	227.0	6.7	3.2	26.5
3	7.7	1.041	1.5122	248.0	6.7	13.0	24.2
4	7.0	1.039	1.5088	254.5	6.6	7.9	24.1
5	9.7	1.052	1.5157	236.5	5.9	14.8	28.0
6	11.6	1.033	1.5088	255.0	5.1	7.7	24.5
7	8.8	1.029	1.4955	259.0	4.3	10.6	19.3
8	7.9	1.023	1.5018	225.0	4.9	9.2	21.9
9	8.3	1.018	1.5036	247.0	4.1	3.8	21.5
10	8.6	1.035	1.5126	259.0	5.0	4.6	24.7
11	10.9	1.037	1.5102	252.5	4.9	4.2	19.7

No. 8 out, because it was not made from official drug, the extreme values for the several constants are as follows, Parry's limits being given alongside for comparison:

Harrison and Self	Parry
Sp. gr., 1.018 to 1.052.	Not below 1.000; usually 1.004 to 1.025.
Ref. ind., 1.4935 to 1.5157.	Not below 1.500; usually 1.505 to 1.509.
Sap. value, 227 to 259.	230 to 250.
Unsaponifiable, 4.1 to 6.7 per cent.	8 to 11 per cent.
Insol. in petroleum ether, 3.2 to 14.8 per cent.	Nothing but a little flocculent matter.
Crude filicin, 19.3 to 28 per cent.	Not below 20; usually 22 to 23 per cent.

Parry's limits would exclude all the above genuine samples, and most of them in regard to two or more characters. The combining weight of the fatty acids, a character employed by Parry, was discarded by the authors as being unsatisfactory, because it was found that washing the ethereal solution to remove traces of mineral acid also removes part of the fatty acids. Samples of extract of male fern obtained from the six principal makers in Germany gave results as follows (the percentage of unsaponifiable was not determined):

Sample	Sp. Gr.	Ref. Ind. at 20°	Sapon. Value.	Insol. in Pet. Ether per cent.	Crude Filicin per cent.
A	1.029	1.5084	223	4.9	25.8
B	1.029	1.5080	237	2.4	28.1
C	1.020	1.4944	218	3.3	24.8
D	0.987	1.4910	205	11.1	13.7
E	1.015	1.5055	213	3.7	21.2
F	0.997	1.4984	225	3.9	19.1

The characters of D are very suspicious, and in any case it should be rejected on account of its low content of filicin. Insistence on Parry's limits would cause the rejection of all but B.

DISCUSSION.

The PRESIDENT, in inviting discussion, said that when the matter of adulterated male-fern extract came up first, samples on the market contained 55 to 60 per cent. of castor oil. The makers excused themselves by stating that as the extract was mixed with castor oil before use there was no great harm in adding castor oil. The standards put forward some time ago by Mr. Parry were hurriedly prepared, and the papers under discussion settled various points.

Mr. E. T. BREWIS said that when the subject first came up he found extract being offered containing as little as 6 per cent. of filicin. He could confirm Mr. Parry's figure for the refractive index. Some extract which his firm made was examined, and the figures

obtained by Mr. Harrison agreed with those of their own samples. In some foreign samples the ether has not been entirely removed. When the extract is evaporated in a thin layer, the gravity went up and the refractive index came within the limits, but the colour was spoiled.

Mr. HILL thought that the factor to convert Mr. Harrison's refractive-index figures (i.e., from 20° to 40°) would be of the order of magnitude of 0.008, and that when this was subtracted from Mr. Harrison's data, the latter would then agree with his own and also conform to the suggested limits. The temperature of 40° C. had been agreed upon as a standard for the determination of the refractive index of butter and for fixed oils and fats, since it is far more convenient to raise than it is to lower the temperature when working with the refractometer, also because of the increase of fluidity and transparency with temperature. He pointed out that his readings in the petroleum-ether test are taken after centrifuging—a necessary precaution in order to obviate variations due to emulsions. Even so, he considered this test to be of somewhat limited value.

Mr. BREWIS asked whether the investigators had noticed a difficulty in obtaining a sharp reading of the refractive index; the edge of the shadow is not sharp in some cases.

Mr. HARRISON said that was his experience, but the index is taken also after dilution with castor oil, as the genuine oil is generally too dark to manipulate without dilution. There is, he added, a good deal of work to be done on this extract, as it would be quite easy to adulterate an oil to pass the constants laid down. He thought that 20° was the usual temperature for taking the refractive index.

The PRESIDENT added that the monograph to be suggested for inclusion in the Pharmacopœia has been purposely delayed until the publication of these papers. It will probably indicate a 20-per cent. limit of filicin.

Mr. HARRISON added that although castor oil does not seem to be employed now for adulteration, a good deal of the old adulterated extract is about.

The next paper, read by Dr. JOWETT, was

Essential Oil of Witch Hazel.

By HOOPER A. D. JOWETT, D.Sc., and FRANK L. PYMAN, Ph.D., D.Sc.

SOME years ago the authors examined a sample of the essential oil of witch hazel (*Hamamelis virginiana*, Lin.), and the results are embodied in this communication. The only previous investigation of the oil was by Wilbur L. Scoville, whose results in the "American Journal of Pharmacy," 1907, p. 496, show: S.G. (at 25°) 0.8984 and 0.8985; refractive index (at 20°) 1.4830 and 1.4892; optical rotation +4.6° and +5.05°; and saponification equivalent 3.80 (after acetylation 30.3). The greater portion of the oil distilled between 250° and 263° C. Ten volumes of U.S.P. alcohol (s.g. 0.816) were required for solution at 25°. Scoville concluded that the oil consists chiefly of a terpene with 7 per cent. of an alcohol and a smaller amount of an ester. The present authors' results agree, on the whole, fairly closely with these, and they find that the chief constituent is a sesquiterpene having $d=0.8970$, $[\alpha]_D^{25}+14.88^\circ$, and $n=1.4916$. A trace of a phenolic substance, a mixture of fatty acids in the free and combined state, and a mixture of solid saturated hydrocarbons were also isolated, while indications of the presence of other compounds, including oxygenated substances, were also obtained. The authors proceeded to describe the experimental work upon which their conclusions were based. The oil employed was specially prepared from pure witch-hazel twigs. It is present in a minute proportion only, and consequently the amount available for this examination was very small (43 grams). The oil was golden

brown in colour. It had $d=0.9001$ (at 15.5° C.) and $[\alpha]_D^{25}+4.29^\circ$ in a 1-dm. tube. It was sparingly soluble in 90-per-cent. alcohol, and when mixed with a little absolute alcohol gave a small quantity of colourless precipitate. It contained 0.6 per cent. of acids calculated as acetic acid, and 7.3 per cent. of esters calculated as

$C_{10}H_{17}, C_2H_3O_2$. No solid compound was obtained with sodium-bisulphate solution, nor basis matter by treatment with 10-per-cent. sulphuric acid. The oil was shaken out five times with a 5-per-cent. solution of Na_2CO_3 . The alkaline liquid was concentrated, acidified with sulphuric acid, and distilled with steam until 1 litre had passed over; the distillate and residue were then separately extracted with ether, and gave fractions A and B respectively.

Fraction A was 0.45 gram of light brown oil, with an odour reminiscent of that of nutmeg. It was fractionally converted into the silver salt, through the ammonium salt, showing $Ag=33.6$ and $Ag=35.0$. $C_{11}H_{21}O_2Ag$ requires 35.1 per cent. and $C_{11}H_{21}O_2Ag$ requires 32.2 per cent.

Fraction B was 0.5 gram of semi-solid dark brown oil. This was extracted with light petroleum, which left 0.1 gram black resin undissolved, and gave on evaporation 0.4 gram light brown oil containing a few crystals. This was rubbed up with dilute alcohol and spread on porous porcelain, when a few colourless crystals remained; these softened at 45° , and melted at 48° to 49° . The porcelain was then extracted with ether, and the oily acid left was converted into the silver salt as above, showing $Ag=30.2$, and $C_{11}H_{21}O_2Ag$ requires 29.7. The oil thus evidently contains a mixture of free fatty acids, the amounts of silver found corresponding to those required for acids ranging from lauric to palmitic acids.

By treatment with a 5-per-cent. solution of KOH, acidification, and ether extraction it yielded 0.15 gram of dark brown sticky oil, with an odour reminiscent of eugenol, but gave a chestnut-brown colour with ferric chloride. The absence of terpenes was proved by nothing distilling below 160° . After hydrolysis with alcoholic potash (boiling three hours) and ultimate extraction of unsaponified oil with ether, the oil was fractionally distilled under 25 mm. pressure, so that six fractions were obtained at (1) 210° to 245° , (2) 245° to 255° , (3) 255° to 265° , (4) 265° to 275° , (5) b.p. over 275° , (6) residues.

Fraction 1 amounted to 1.4 gram, and was a colourless liquid with an odour of saffrol, $d=0.8824$.

Fractions 2, 3, and 4 were a colourless oil with a peculiar smell, which on refractionation and analysis gave figures consistent with $C_{15}H_{25}$ (a sesquiterpene) and the following factors: $d=0.8970$, $[\alpha]_D^{20}+14.88^\circ$, and $N_D^{20}=1.4916$, whence molecular refraction=66.0. This shows the presence of two double linkings, $C_{15}H_{25}$: 2 requiring 65.7. The sesquiterpene gave liquid addition-products with hydrochloric-acid gas and with bromine.

Fraction 5, b.p. over 275° under n.p., was fractionated six times under 25 mm., and the following fractions eventually obtained, those at 180° to 203° and 203° to 313° , on cooling, yielding a colourless crystalline substance difficultly soluble in water, alcohol, or acetone. These and the fractions over 213° were mixed with acetone, and the solid frozen out at -10° . After purification it was found to be a mixture of saturated hydrocarbons, and the mother-liquors consisted of sesquiterpenes and oxygenated compounds.

The strongly alkaline liquid separated from the oil and completely extracted with ether was evaporated to a small bulk, then acidified with sulphuric acid, and distilled with steam. After distilling over 1 litre of liquid, the distillate and distillation residue were separately extracted with ether, and the fractions were found to contain fatty acids and resin.

DISCUSSION.

The PRESIDENT said the results were apparently negative.

Dr. F. B. POWER asked whether the water from which the floating oil was separated had been examined for some volatile constituents which might account for the properties which could not be explained by the authors.

Dr. JOWETT said the aqueous portion had been examined, but yielded no explanation of the properties.

Mr. FINNEMORE asked whether the presence had been confirmed of an aldehyde which another investigator had found.

Dr. JOWETT had not found the body referred to.

The next paper, read by Mr. CARR, was

Ergot and its Preparations.

A critical review of the requirements of the British Pharmacopœia.

By F. H. CARR, F.I.C., and H. H. DALE, M.A., M.D.

THE chemistry of ergot and its active principles has been obscure and confused until recently, so that Pharmacopœia preparations of the drug have had traditional rather than scientific sanction. The authors consider that physiological

standardisation of ergot fails, as results by different workers on the same thing are discordant. They have now studied the whole subject in the light of the chief active principles which have been isolated in a state of chemical purity, particularly (1) ergotoxine (Barger and Carr, 1906), to which ergot owes its therapeutic activity and its dangerously poisonous properties (including the power of producing gangrene); (2) physiologically active members of the series of amines derived from amino-acids by splitting off CO_2 (Barger and Dale). As to the second there seems little doubt that their abundance in certain ergot extracts is in part due to putrefactive changes which occur during the preparation of the extract. Two of them are—(a) p-hydroxyphenylethylamine ("Tyramine"), which acts physiologically like the active principle of the suprarenal gland, and is the substance chiefly concerned in the widely recommended standardisation of ergot by the production of a rise of blood-pressure; and (b) β -iminazolyethylamine ("Ergamine"), which has an action of peculiar intensity on plain muscle, and particularly on that of the uterus, and is therefore the most important factor in methods of standardisation based on observation of the direct action of ergot extracts on uterine muscle. The authors pointed out that the existing pharmacopœial criteria for the drug and its preparations have no deliberate relation to any of these active constituents.

Unofficial Ergots.—Many years ago Kobert reported that he had observed a very high degree of activity in an ergot growing on a wild grass from Algeria. The authors have had the opportunity of examining ergot from the tall fescue grass (*Festuca arundinacea*) which grows wild in vast swampy areas in New Zealand, and is said to be constantly and heavily infected with ergot. Dr. Dale treated the ergot with 60-per-cent. alcohol, acidulated with acetic acid, and evaporated to small bulk *in vacuo*, the residue taken up in dilute caustic soda, and this solution cleared by centrifugalising at high speed. Physiological tests on the basis of ergotoxine showed that the festuca ergot is three times as active as average rye ergot, containing about 0.1 per cent. of ergotoxine. Mr. Carr by chemical means found an alkaloidal content of 0.34 per cent., the greater part being ergotoxine. This confirming the physiological observation, a specimen of wheat ergot from Sweden was also examined and found to contain more ergotoxine (0.12 per cent. alkaloid) than average good rye ergot. Both these ergots, as shown by their action on the isolated uterus, also contained a normal proportion of the active amines, and are in every way suitable for the preparation of active extracts; but the introduction of the potent festuca ergot into pharmacy as an alternative to rye ergot would not be justified without the establishment of a standard of alkaloidal content or of physiological activity. In view of the fact that the supply of ergot from rye or other cereals is likely to diminish with the spread of scientific agriculture, the value of the ergot of festuca, and probably of other wild grasses, as a source of the only active principle for which ergot is needed, seems worthy of attention.

B.P. Preparations.—The authors next criticised the methods for making ergot extracts. Ergotoxine has properties very unusual in an alkaloid. Its salts possess very little true solubility in water, and not much in dry alcohol. They are more soluble in mixtures of alcohol and water than in either solvent alone. In pure water they form colloidal solutions, from which they are readily thrown down by strongly ionised acids or their salts. In the presence of alkalies, such as ammonia or sodium carbonate or hydrate, ergotoxine is unstable. Boiling with absolute ethyl or methyl alcohol converts it into its anhydride, the crystalline ergotinine of Tanret, which is physiologically inert. On the other hand, weak acids, in watery or dilute alcoholic solution, convert the inactive ergotinine into ergotoxine. It is clear from a consideration of these properties that the ideal extract for obtaining the full proportion of ergotoxine from a given ergot and for retaining it in solution is a moderately dilute alcohol, acidulated with a feebly dissociated acid, such as acetic, tartaric, or phosphoric acid. The U.S.P. fluid extract fulfils that condition. The authors showed how in the B.P. methods almost everything that is done ensures that the active

constituents of the drug will either remain in it or be present in altered condition or minimum quantity in the preparation. Thus the process for extractum ergotæ (ergotin) starts by extracting the ergotoxine and gets rid of it at a later stage. Extractum ergotæ liquidum would be expected in theory to contain only a very small and variable fraction of the ergotoxine in the ergot, and the physiological test confirms this, but it is rich in amines. In the light of these facts they suggest that the retention in the Pharmacopœia of both extracts is undesirable. The amines, to which they chiefly owe what activity they possess, can easily be obtained pure from other sources, and it is not reasonable to depend for their administration on their occurrence partly as the result of haphazard and uncontrollable putrefactive changes in the extract from a relatively expensive drug owing its specific activity to a totally different substance, which is mostly lost in the extraction process. Infusum ergotæ is open to similar criticism—water extracts very little of the specific active principle. The fact that it is made with hot water, and therefore rich in colloidal constituents such as dextrin, probably assists the retention of some ergotoxine in suspension. The ammoniated tincture, being an alcoholic preparation, contains initially a larger proportion of ergotoxine than those already mentioned, but the addition of ammonia frees the ergotoxine in the unstable basic condition, and ensures the presence of a high proportion of acidic resinous substances, which must inevitably be precipitated in the stomach and delay absorption. The authors concluded that the British Pharmacopœia should revise its ergot monographs as follows:

1. Ergots other than rye ergot should be sanctioned if standardised for active alkaloid.
2. Extractum ergotæ should be abandoned. If a soft extract is needed, as in the preparation of pills, the extraction should be carried out with 60-per-cent. alcohol, and to this citric acid should be added instead of hydrochloric. The acid might with advantage be added to the alcohol before the extraction is performed. Such a product could be evaporated to a soft extract without filtration, and would contain practically the whole of the active constituents of the ergot.
3. Extractum ergotæ liquidum should be abandoned, and replaced by the U.S.P. preparation (49-per-cent. alcohol containing 2 per cent. of acetic acid).
4. Injectio ergotæ might be abandoned, and replaced by suitable salts of ergotoxine.
5. A satisfactory tincture could be made with 60-per-cent. alcohol, without ammonia, but recommendation 3 renders this unnecessary.

DISCUSSION.

The PRESIDENT said the paper was an ideal one by reason of the way the chemical and physiological tests are put together. He recounted an experience of the physiological test, involving a 20-gal. batch, which shows that that method is not altogether trustworthy. If the sources of ergot could be widened, it would be a fine thing from a commercial point of view. It is not too late for the results given in the paper to be embodied in the new Pharmacopœia.

Mr. HOLMES said there are numerous ergots of various sizes, and it has been stated that the fungus is the same whatever grass it grows upon. He had found formerly that there was no difficulty in getting a satisfactory ergot if it were kept dry.

Mr. C. A. HILL asked whether ergot preparations should be standardised for ergotoxine alone.

Mr. FRANKLIN, referring to a paper he contributed to the Cambridge Conference, said that the use of weak alcohol greatly enhanced the activity of the liquid extract. He hoped that the new B.P. would embody an improved preparation.

Dr. SYMES, referring to the action of heat on ergot preparations, said that the maker of a solution which formerly had a great vogue in Liverpool told him that in evaporating the preparation he had not found it necessary to keep down the temperature.

Mr. BIRD asked whether ergotoxine is soluble in glycerin, as glycerin preparations have a high reputation of activity.

Mr. FINNEMORE said the paper showed how terribly pharmacists had blundered hitherto in their ergot

preparations. He asked whether any experiments had been made to prove the activity of ergots grown on other *Graminaceæ* than rye. Before ergotin injection is displaced, he would like to know whether ergotoxine is a commercial article.

Mr. GRIER said the weak point of the paper was that no method of standardisation is given, nor is any indication contained as to the test preferred by the authors.

Dr. DALE said it is useless to talk about standardisation until doctors agree as to what activity they desire. The point of the paper has been to try to clear up the matter and show where we have arrived. If ergotoxine is wanted it can be obtained, but if the activity is due to the numerous amines, these can be obtained from other sources much cheaper. He had found that ergotoxine is always present in active preparations. Mr. Carr is devising a chemical method of standardising ergotoxine.

Mr. BREWIS asked whether glycerin is used as a solvent for active principles of ergot. He recalled that a preparation much employed formerly at the Rotunda Hospital, Dublin, was prepared with glycerin and water.

Mr. CARR, in reply, said that the whole subject is one in which progress is being made. He had a chemical method in hand of estimating ergotoxine by which he could separate crystalline ergotoxine from the ergotin, but the process is not yet complete. It is a total alkaloid method. He proposed that ergotoxine should be the only criterion of activity. Glycerin is not a good solvent for ergotoxine, but it assists it to remain in the colloidal solution. It is not, however, so good a solvent as the alcohol and acetic acid menstruum referred to in the paper. Attempts have been made to grow ergot on other media than grasses, but have not succeeded so far. Ergotoxine is not a commercial substance, but the process of preparation has been published and the demand could be met.

The next paper, read by Mr. C. A. HILLS, was

Determination of Hypophosphites.

With notes on commercial samples.

By T. TUSTING COCKING, Ph.C., and JAMES D. KETTEL, B.Sc., F.I.C.

THE use of potassium dichromate for the assay of hypophosphites has apparently not hitherto been proposed. This method has the advantage that the pure salt which is readily obtainable is very stable in solution, the requisite quantity of the pure dried salt being dissolved in water, further standardising being unnecessary. The results obtained are both concordant and accurate, the figures being checked by the gravimetric process suggested by Jowett (*C. & D.*, 1898, II., 300), and also against the bromine method of Rupp and Kroll ("*J.C.S.*," 1911, Abst. II., 1133) with the following results:

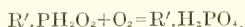
Salt	Dichromate Method	Rupp and Kroll's Method	Jowett's Method
1. Calcium hypophosphite...	96.35	96.5	—
2. Sodium " ...	89.2	90.3	88.7
3. " " ...	89.5	89.2	—
4. " " ...	88.25	89.0	88.4
5. " " ...	88.4	90.2	88.9

Dr. Jowett's process is accurate but tedious, while Rupp and Kroll's method of oxidising by excess of bromine with subsequent titration of the excess is also exact, but requires very delicate handling to avoid loss of bromine with consequent high results. Whereas in Jowett's process the excess of lead from the lead acetate used to precipitate phosphite must be removed before oxidation, the presence of lead is not objectionable when dichromate is used. The method now proposed is as follows:

2.5 grams of the salt under examination is dissolved in 40 c.c. of water and an excess of lead-acetate solution (10 per cent.) added to precipitate phosphites (5 c.c. is usually

sufficient), and the solution is made up to 50 c.c., well shaken, and allowed to stand until the supernatant liquid is quite clear (usually about one hour); 10 c.c., representing 0.5 gram of the salt, is carefully pipetted off, 50 c.c. of normal potassium-bichromate solution and 10 c.c. of sulphuric acid added, and the mixture heated on the water-bath. At the end of an hour the solution is cooled and diluted to 250 c.c. with water. The excess of dichromate is then determined on 50 c.c. of this solution by titration with decinormal sodium-thiosulphate solution, after addition of potassium iodide.

The hypophosphorous radicle is completely oxidised to phosphate by absorbing two atoms of oxygen according to the equation:



The error due to the bulk of the lead precipitate is negligible, this not occupying more than 0.05 per cent. of the volume of the liquid.

Phosphites are determined if necessary by repeating the above process with the omission of the treatment with lead acetate. The difference between the amounts of dichromate reduced is calculated into phosphite, one atom of oxygen only being required for the complete oxidation of the phosphite radicle.

The examination of a number of commercial samples of hypophosphites from various sources gave the following results:

Calcium Hypophosphite.—Six samples gave 95.95, 98.0, 97.50, 99.55, 99.75, and 99.65 per cent. $Ca(PH_2O_2)_2$, moisture being 0.05 to 0.1 per cent. Traces of sulphates were usually present.

Sodium Hypophosphite.—Eight samples contained 84.5, 85.8, 94.5, 86.7, 87.15, 88.9, 90.8, and 91.7 per cent. of $NaPH_2O_2$. The amount of moisture varied from 5.35 to 11.15 per cent. A mere trace of phosphite was present usually, except in the fourth (86.7 per cent. of $NaPH_2O_2$), which also contained 5.1 per cent. of sodium phosphite, 0.5 per cent. of sodium sulphate, and 1.3 per cent. of sodium carbonate, making with moisture (7.1 per cent.) a total of 100.7 per cent.

Potassium Hypophosphite.—Two samples examined contained 94.5 and 99.5 per cent. KPH_2O_2 respectively.

Hypophosphorus Acid.—Three samples gave by the dichromate method 31.5 (33.12), 32.93 (33.53), and 31.99 (32.83) per cent. of H_3PO_2 respectively, the figures in parentheses being those corresponding to the total acidity. Sulphates and chlorides were absent. In removing the phosphite from the acid it is necessary to neutralise with soda before adding the lead acetate. Lead phosphite appears to be fairly soluble in hypophosphorus acid, but lead hypophosphite is rather insoluble, and readily precipitates in the form of pearly white scales.

Manganese Hypophosphite.—Six samples gave the following percentages of $Mn(PH_2O_2)_2 \cdot H_2O$: 98.98 (calcium, sodium, chlorides, and sulphates absent); 92.71 ($NaPH_2O_2$, 7.0 per cent., and faint traces of chloride and sulphate); 89.9 (89.3 estimated as Mn, KCl 8.5 per cent., and loss on drying at 100° , 0.4 per cent.). In a fourth manganese hypophosphite was not determined, 18.1 per cent. of calcium hypophosphite being present, but chlorides and sulphates were absent. The fifth and sixth were partially dehydrated, and contained the equivalent of 103.1 per cent. (102.9 and 103.5 per cent. respectively estimated as Mn) of hydrated manganese hypophosphite, the former being free from chlorides and sulphates. In no case was more than a trace of phosphite present. The manganese was determined in the case of samples free from calcium by oxidising with potassium chlorate and hydrochloric acid, adding ammonium chloride and precipitating manganese ammonium phosphate by the addition of ammonia to the boiling solution, filtering off, igniting, and finally weighing as manganese pyrophosphate ($Mn_2P_2O_7$). The calcium present in sample No. 4 was estimated on 5 grams dissolved in dilute hydrochloric acid. The solution remained clear on adding ammonium chloride and ammonia (showing absence of appreciable quantities of phosphate), and the bulk of the manganese was removed by precipitation as sulphide. The calcium in the filtrate (which was red) was precipitated by ammonium carbonate in the presence of a large amount of ammonium chloride. The precipitate was well washed, dissolved in acetic acid, reprecipitated as oxalate, and finally weighed as sulphate.

Ferrous Hypophosphite.—Three samples contained the following percentages of $Fe(PH_2O_2)_2$: 80.3 (14.1 per cent. Na_2SO_4), 90.93 ($Fe^{II}(PH_2O_2)_2$, 4.83 per cent.), and 73.7 (moisture 26.0 per cent.). In these results any phosphite present is included in the amount of hypophosphite found, as no satisfactory method could be devised for removing it. The excess of dichromate after oxidation of the hypophosphite and ferrous radicles was titrated with decinormal

solution of ferrous ammonium sulphate. The hypophosphite was calculated by difference after estimating the iron separately. The iron was determined by dissolving in sodium-citrate solution, precipitating with excess of caustic soda, and weighing as Fe_2O_3 , or by titrating the solution of the hydroxide in hydrochloric acid with potassium iodide and thiosulphate. The iron was also estimated by the method used for total iron in the ferrous salt (see below), with concordant results.

Ferrous Hypophosphite.—No. 1 contained 33.76 per cent. $Fe^{II}(PH_2O_2)_2$ and 47.82 per cent. $Fe^{III}(PH_2O_2)_2$, as well as 6.71 per cent. of sodium hypophosphite and 7.23 per cent. of sodium sulphate. No. 2 contained 44.99 per cent. of the ferrous salt and 24.37 per cent. of the ferric salt. There was also present 22.65 per cent. of calcium hypophosphite, but sulphates were absent. This is a very unsatisfactory salt, consisting as it does of varying quantities of ferrous and ferric salts. Total iron was found by oxidising with potassium chlorate and hydrochloric acid, and subsequently reducing to the ferrous state with stannous chloride. The excess of the latter was removed by adding mercuric chloride, and the iron then titrated with decinormal potassium dichromate solution, using potassium ferricyanide as indicator. Ferrous iron was next determined by dissolving the salt in hydrochloric acid, pouring the solution into a large excess of hot mercuric-chloride solution, when calomel is precipitated and the hypophosphite oxidised to phosphate. The ferrous iron was then titrated as above. The accuracy of this method was proved by check experiments on mixtures of ferrous sulphate with sodium hypophosphite and a ferric salt.

The factors for 1 c.c. of normal potassium-dichromate solution are:

0.021273 gram $Ca(PH_2O_2)_2$	0.025382 gram
0.022014 gram $Na_2PH_2O_2$	$Mn(PH_2O_2)_2 \cdot H_2O$
0.026039 gram KPH_2O_2	0.020917 gram $Fe^{III}(PH_2O_2)_2$
0.016514 gram $H_2PH_2O_2$ (acid)	0.016264 gram PH_4O_6 (radicle)

The work involved for this communication was carried out in the analytical laboratory of The British Drug Houses, Ltd.

DISCUSSION.

Mr. HILL remarked that from his own knowledge the process gave concordant results with analysts who had had no previous experience of it.

Mr. TYLER mentioned that an attempt to estimate hypophosphites on these lines had been started in his laboratory in 1897, but pressure of work prevented the difficulties met with being eventually overcome. He agreed that Rupp and Kroll's method required delicate handling, but said Jowett's process was the standard one. It was interesting to find that the removal of excess of lead was not necessary in the dichromate process, and he welcomed it on that account. Mr. Hill's generalisation that manganese hypophosphite is heavily contaminated with the salts used in manufacture is not borne out on reference to the remarks on that salt in the paper. The authors made criticisms on ferric and ferrous hypophosphites without realising the difficulties of manufacture. On the whole the paper was informative and useful.

Dr. H. A. D. JOWETT asked if check experiments had been carried out in solutions of pure calcium hypophosphite to which known amounts of lead acetate had been added.

Mr. HILL, in replying, said samples 2, 3, and 4 justified his generalisation. He could not say if check with added lead had been done or not.

The PRESIDENT asked Mr. Hill to convey the thanks of the Conference to his assistants.

Mr. BREWIS then read the following paper:

Powdered Rhubarb.

By E. T. BREWIS, F.I.C., and H. DEANE, B.Sc., F.I.C.
THIS investigation was undertaken at the suggestion of Professor Greenish for the purpose of discovering what is a fair standard of extractive if it be decided to follow the example of many Continental Pharmacopœias and insert such a requirement in the forthcoming British Pharmacopœia, and also to investigate the quality of the powdered rhubarb at present being sold. Samples were obtained from wholesale and retail dealers, and samples ground by Stafford Allen & Sons were also examined.

The determination of moisture was made by drying 5 grams in a flat-bottomed, stoppered weighing-bottle

placed in an air-oven which was maintained at a temperature of 100° to 105° C. It was found that the loss of moisture proceeded at an irregular rate, and the operation was tedious, as prolonged drying was necessary in order to obtain approximately correct weights.

The determination of alcoholic extract was carried out as directed in the German Pharmacopœia :

Five grams of the air-dry powder was macerated for twenty-four hours in 50 c.c. of dilute alcohol (50 per cent. by volume); 20 c.c. was filtered off and evaporated in a shallow, flat-bottomed nickel dish, and finally dried at 105° C., which took about twenty hours.

The ash was obtained by incinerating 1 gram in a shallow platinum dish placed in a muffle heated to dull redness, with free admission of air, this operation occupying from twenty to thirty minutes. No examination was made of the ash, but each sample was treated with dilute hydrochloric acid, in which, with four exceptions, they were almost entirely soluble.

MICROSCOPICAL EXAMINATION.—It is very satisfactory to note that none of the samples showed evidences of adulteration. Several contained occasional fragments of sclerenchymatous fibres, probably derived from fragments of string that are sometimes left in the pieces. One sample which came from a "medical herbalist" showed an appreciable proportion of extraneous matter.

The authors called attention to some interesting points in the histology of rhubarb. The first is that rhubarb does not contain any lignified tissue. It contains vessels with thickened walls, but these will not stain with phloroglucin or other reagents for lignin, so that anything in powdered rhubarb stained red by phloroglucin may be put down at once as foreign matter. The second point is that all the samples of powdered rhubarb examined contained gelatinised starch-grains. In most specimens they are easily found, though the proportion is not large; others contain a large number, while in others, again, careful search is necessary to discover them, but they are discoverable in every case. The proportion seems to have no connection with the quality. The explanation of their presence is not obvious. One would naturally put it down to the use of excessive heat in drying, but, according to the travellers quoted by Hosseus ("Archiv der Pharm.," 1911, 249, 419), Chinese rhubarb is not dried by artificial heat; moreover, English rhubarb which has certainly never been in any temperature that would gelatinise starch, shows the same phenomenon. Possibly the change in the grains is caused by enzymes which get a chance of acting during the necessarily slow drying of the fleshy rhizome.

With regard to the use of turmeric as an adulterant of rhubarb, although fresh tests for it appear in foreign papers at frequent intervals, the authors think that, as far as England is concerned, this adulterant is unknown.

Tables were given showing the results of the examination of powdered rhubarb. The first table gave the results obtained with nineteen samples bought from various sources, while the second table referred to twenty-six samples ground by Stafford Allen & Sons. The ash and extract were determined on the air-dry drug, but the calculated figures for the powders dried at 100° to 105° C. were added for comparison. The conclusion to be drawn from the figures presented is that the limit of ash of 12 per cent. on the air-dry drug suggested by the Committee of Reference in Pharmacy will include nearly all the powdered rhubarb of commerce, but it is notable that the two samples with 13.04 and 12.28 per cent. are both in other respects very good samples. For the extractive, the minimum of 35 per cent. on the air-dry drug demanded by the German Pharmacopœia seems to be reasonable.

The authors acknowledge their thanks due to Stafford Allen & Sons, Ltd., London and Long Melford, at whose expense and in whose laboratories the investigation was carried out; also to W. W. Busby for assistance in experimental work.

DISCUSSION.

The PRESIDENT said the communication afforded useful data for the British Pharmacopœia. He did not see any figures for Canton rhubarb which contained

as little as 4 per cent. of ash. It would be wise to take the figure for extractive for inclusion in the B.P., but it appeared to be unwise to fix an ash limit.

Mr. E. M. HOLMES pointed out that rhubarb dried too quickly had dark cores. Apparently in some parts of China rhubarb was dried by artificial heat.

Mr. E. F. HARRISON said he had met with good samples of rhubarb containing more than 12 per cent. of ash. A German traveller reported that high-dried did not refer to temperature but to hanging high.

Mr. H. DEANE stated that Hesse said high-dried rhubarb was dried under the eaves of houses.

Mr. T. E. BREWIS said it is impossible to dry the fleshy root of rhubarb by artificial heat. It must be dried slowly.

The next paper was on

Honey from *Datura Stramonium*.

By HAROLD DEANE, B.Sc., F.I.C.

In this communication the author exemplified the devious paths by which statements get into books of reference, and the difficulty of stopping the spread of false information once it has got a start.

The "United States Dispensatory" (19th ed., p. 773) contains a statement that honey collected by bees from *Datura Stramonium* is poisonous, while in Tschirch's "Handbuch der Pharmakognosie" (Band II., S. 10, 14) *datura* is included in a list of plants that afford poisonous honey. At the time these paragraphs were noticed there was a considerable area of *Datura Stramonium* in bloom at the drug-farms of Messrs. Stafford Allen & Sons, Ltd., at Long Melford, in close proximity to several beehives. Inquiry showed that stramonium had been grown near the hives in previous years and that no complaints of the honey had arisen. On examining the plants no bees were found visiting the flowers. As the nectaries are at the bottom of the long corolla-tube it is evident that the flowers are adapted for pollination by night-flying insects with long proboscides, and not by bees. Knuth, the authority on pollination, gives hawk moths and small beetles of the genus *Meligethes* as the only insect visitors to *Datura Stramonium*.

Tschirch mentions "Flückiger" as his authority, but the author was unable to trace this further. The "United States Dispensatory" gives H. Bley ("Pharmaceutische Zeitung," 1885, 30, November 25) as the authority. From the minutes of the Dresden Beekeepers' Association it was found that on October 25, 1885, Herr Bley had given not an original paper, but read some abstracts, including one from the "Drogen Zeitung" (No. 34) on poisonous honey from Trebizonde. A search for that particular issue of the "Drogen Zeitung" was not successful, but the original source is evident in the "Notes on Trebizonde Honey" read by J. C. Thresh before an evening meeting of the Pharmaceutical Society (C. & D., 1887, II., 614). In this reference was made to the report for 1879 of Mr. A. Biliotti, H.M. Consul at Trebizonde, in which he said the honey produced in the province of Trebizonde is unfit for food. He added: "It is presumed that the poisonous principle contained in the honey is gathered from the flowers of the *Datura Stramonium*, which grows in abundance on the coasts." Dr. Thresh examined a sample of this honey sent by Mr. Biliotti to England, and showed that there was no alkaloid in it; Dr. Stockman corroborating by showing that none of the extracts obtained from it diluted the pupil. Dr. Thresh thus came to the conclusion that Mr. Biliotti's theory was wrong, and supported the idea, which has since been fully confirmed, that *Azalea pontica* is the source of the poisonous honey from Trebizonde. It does not necessarily follow that because other parts of the plant are poisonous the nectar is toxic also. Honey-bees visit belladonna-flowers sometimes in large numbers, but no bad results have been reported from eating the honey from hives kept near the fields of belladonna at Long Melford. Thus a rash guess made by a British consul, which was afterwards corrected, is still flourishing after more than thirty years.

The PRESIDENT, in thanking Mr. Deane, recalled the gratifying fact that he is a grandson of the first President of the Conference.

The next paper, which was read by Mr. PECK, was

Tablet-making for the Retailer.

By P. G. CHAMBERLAIN, M.A.

THE author contends that the home-manufacture of tablets is neglected, and gave notes on the methods which he employs. Besides the apparatus found at the dispensing-counter, there are required a small hand-power machine with four sets of punches ($\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, and $\frac{1}{2}$ in.), hot-water drying-table, two 18-in. sieves (No. 20 mesh; one brass for white powders, and one iron for coloured powders). No special excipients, such as theobroma emulsion, are required. The three methods of procedure were given as (1) general, (2) direct compression, and (3) direct heat method.

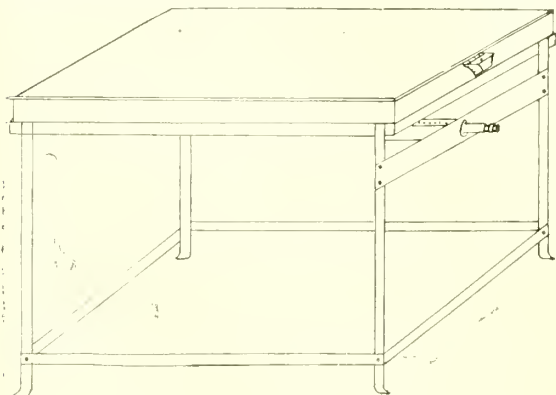
THE GENERAL METHOD

consists of (a) calculating the formula, (b) weighing and mixing, (c) granulation, (d) drying, (e) lubrication, (f) compression. The formula calculation is for the purpose of obtaining a tablet of correct thickness, experimental work being needed to find out the amount of diluent required. An example of the entry in a notebook kept for the purpose was given for calomel tablets:

—	gr. $\frac{1}{10}$	gr. $\frac{1}{8}$	gr. $\frac{1}{4}$	gr. $\frac{1}{2}$	gr. 1	gr. 2
Calomel ...	10	16½	25	30	100	200
Sugar ...	40	40	40	40	40	75
Starch ...	15	15	15	15	15	25
Talc ...	3	3	3	3	5	10
Size of Die	$\frac{1}{16}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$ inch
Weight of 10 tablets (approx.).	10=6gr.	10=7gr.	10=3gr.	10	10	10
				=10 gr.	=15 gr.	=30 gr.

Granulate with equal parts of spirit and water.

The importance was emphasised of well mixing the ingredients in a mortar; the adhesive when required (5 per cent. of powdered gum) and the disintegrator (5 to 15 per cent. of starch) are added at this stage. Then follows granulating, the liquid used being almost always a mixture of equal parts of water and spirit or spirit alone, but in some cases thinned syrup. Special care is needed not to add too much liquid. The moistened powder is then passed through a sieve (placed on a sheet of paper), aided by the fingers. Some substances, such as quinine and acetyl-salicylic acid, are liable to clog the sieve if a shade too wet. With large quantities of acetyl-salicylic acid it is expedient to transfer the moistened mass to the hot-plate, and when dry gently break up the caked mass and push carefully through the sieve with the fingers. The sifted granules are then transferred on the sheet of



DRYING PLATE FOR TABLET GRANULES.

paper to the hot-water table, which is one made by Brown & Son, Charlotte Street, London, N.W., and having a surface 48 in. by 20 in., sufficient for drying several batches of granules at a time. The only two substances which are affected injuriously by the heat of the hot-water table are acetyl-salicylic acid and rhubarb and

soda. As the lubricant the author uses French chalk, which he keeps in a container with sprinkler top. French chalk is sprinkled on the dry granules while still on the hot-water table, and then the granules are transferred to a large dry wide-mouthed bottle and shaken well. Too much lubricant gives an unnatural shiny appearance which should be avoided. Usually 3 per cent. is sufficient, but many substances require about 5 per cent., the amount varying with the nature of the material to be compressed—many vegetable powders require very little, and some ingredients are good lubricants themselves. Finally, the lubricated granules are sifted to break up any lumps that remain, but this operation is not always necessary, merely pressing between paper being often sufficient. In regard to compression, the makers of the machine supply directions for putting in the dies and punches. When these are in shape, and before screwing on the shoe, is the moment for roughly adjusting the lower punch so as to receive the correct weight of the substance, and also for adjusting the compression by turning the upper punch up or down as the case may be.

COMPRESSION.—Having put some of the granules on the platform of the machine, fill the die, taking care that the punch is as low as it will go, and revolve the wheel cautiously, making the necessary adjustments. Turn out a few tablets in this manner until the correct weight of five or six is obtained. In this way the correct weight is roughly ascertained. Be sure to adjust the bottom punch so that it is exactly flush with the die at the top of the stroke, otherwise the shoe (which is made of soft white metal so as to reduce damage to the punches to a minimum) may get grooved if the punch is too high. If the punch is too low the tablets are chipped as they are kicked off. Now screw on the shoe and fill it with the dry lubricated granules, then finally check the weight of the tablets by turning off a few at speed. Make the necessary adjustments, and see that all nuts are tight, and everything is now ready for compression. This is the critical moment of the whole process, especially when trying new formulæ, but one can always tell after the first dozen or so have been compressed if they are going well. The resulting tablets will now chiefly depend on the correct degree of compression. With a 5-grain tablet there should be just a moderate resistance felt when the machine handle is turned at the rate of about 90 r.p.m. With a large tablet—say, of 10 grains—the resistance should be proportionately greater, while for a 1-grain tablet it should be scarcely perceptible. The tablets should be tested by breaking between the fingers, as well as by observing their appearance. As the tablets are kicked off the platform by the shoe they should be collected in a tray with fairly deep sides, so as to prevent any of them being scattered on the ground. Finally, they should be sorted and any faulty ones picked out. They should then be transferred to wide-mouthed stoppered bottles, properly labelled, and placed on a shelf specially kept for tablets. Sometimes when making a large batch—say, 1 lb. of 1-grain calomel tablets, which means turning the wheel for an hour at 100 r.p.m.—the pressure may become slightly altered, due to the vibration of the machine causing a slight alteration to the bottom adjustment mechanism. One should therefore slow down occasionally and notice the resistance when the wheel is turned slowly, or check the weight of a few tablets periodically.

“Picking” and “capping” as causes of trouble have been grossly exaggerated, and are easily remedied, either by a little more talc or a slight alteration of pressure. A worse trouble is a scraping or screeching noise caused by the substance getting in between the bottom die and punch, the consequence being that the punch sticks in its die, and can only be moved by jerking the wheel, which puts a strain on the machine, but ejects a fair tablet if the wheel is turned slowly. This trouble may take place without warning, and is especially prone to happen with certain substances, such as granular sodium citrate if compressed direct, and with a mixture of phenacetin, caffeine, and acetyl-salicylic acid. There seems to be no remedy; extra talc makes matters worse, and all that can be done is either to proceed slowly at the rate of about twelve a minute, or try over again.

DIRECT COMPRESSION.—Besides the well-known chemicals

that can be treated in this way, such as urotropine and potassium bromide, the only one needing comment is calcium lactate. This salt can be obtained in powder, lumps, or small acicular crystals. Samples should be obtained, and the one selected which affords the nicest granules. Add the usual percentage of starch and French chalk, and compress into tablets. The ordinary powdered salt is unsuitable.

DIRECT HEAT WITHOUT GRANULATION.—Under this heading come all tablets containing a large proportion of resinous substances, such as scammony, aloes, or podophyllin. Tablets prepared by this method usually require a diluent, starch being the best. Place the powders and diluent, well mixed, on a piece of thick paper ready for heating. Have ready an iron plate $\frac{1}{8}$ in. thick and about 12 in. square, supported on legs. Light the burner under the plate, and wait about ten minutes until it is quite hot; then place the powder on the hot-plate, and stir well with a pill-knife, and the powder at once becomes granular. After removing from the source of heat, shake the granules carefully through one of the sieves; if there are any lumps help them through by lightly pressing with the fingers; weigh, and calculate the weight of the tablet, add the lubricant, and proceed to compress.

EXAMPLES OF FORMULÆ.

Many substances look as if they might be compressed direct. Granular sodium citrate as obtained from the wholesaler is one of these, but on trying the granules in the machine, even after lubrication, trouble results. Codeine phosphate is another substance that behaves badly. As ordinary sodium citrate contains a large amount of water of crystallisation, it is better to use the exsiccated salt, making the necessary allowance. The general method should be followed, granulating with a little syrup and adding about 5 per cent. of talc.

Dover's Powder gr. 5 is an example of how formulæ may be adapted for tablets without interfering with therapeutic effect:

Opium, in finest powder	...	...	...	...	Gr.
Ipecac., " "	...	...	...	...	50
Sugar, " "	...	...	...	...	50
Starch ...	...	...	...	...	400
Talc...	...	...	...	...	35
					15
					—
					550

Make 100 tablets; each tablet to weigh $5\frac{1}{2}$ grains.

The potassium sulphate, being gritty and of no therapeutic value, is omitted, and enough sugar added to make a suitable tablet.

Substances of the nature of quinine sulphate, quinine salicylate, sodium citrate, codeine phosphate, and morphine salts require an increased amount of adhesive and an extra percentage of talc, about 5 per cent. or more, till they run smoothly. All small tablets containing a large proportion of powdered extracts, such as belladonna, hyoscyamus, and aloin, require very careful granulation, a few drops of 90-per-cent. alcohol generally being sufficient. About the same is taken to make tablets as for pills.

DISCUSSION.

Mr. R. A. ROBINSON, JUN., in response to an invitation from the President to defend the use of theobroma emulsion, said he felt he could not defend adequately Mr. White.

Mr. POLLARD said that the apparatus required for tablet-making is expensive, but in small towns the pharmacist does not always take up the manufacture because it pays. It is one way of obtaining the respect and confidence of the public.

Mr. CLAGUE said the use of fatty acids is not necessary in the manufacture of tablets, as talc gives good results. The makers of tablet-machines employ hardened steel for the whole machine instead of for the working parts only. This causes difficulty when small repairs are needed. One trouble which is found in tablet-making is rust in the dies. He (the speaker) found it best to keep the working parts when not in use in heavy paraffin oil. The time taken by Mr. Chamberlain to make tablets seemed to be rather long.

Mr. GRIER said his experience in tablet-making is limited, but he found a trace of vaseline useful for making phenacetin into tablets. The time taken up in granulating accounts for most of the time taken in tablet-making.

Mr. FINNEMORE said the author did not say how long his tablets require for disintegration. He did not think it was justifiable to leave out the potassium sulphate in Dover's tablets and still apply that name.

Dr. SYMES defended the use of cocoa-butter, which he had found exert a protective action with hygroscopic substances.

The next paper, read by Mr. HAMPSHIRE, was

The Composition of Certain Formates.

By C. H. HAMPSHIRE, B.Sc., A.I.C., Ph.C., and
W. R. PRATT, B.Sc., A.I.C., Ph.C.

In this extended investigation on the principal formates used in pharmacy commercial specimens were also examined. Formic acid was determined in metallic salts by the alkaline permanganate method of H. C. Jones ("Amer. Chem. Jour.," 1895, 17, 539), while with alkaloidal salts it was titrated with standard alkali in alcoholic solution.

SODIUM FORMATE (H.COONa.) was found to crystallise from aqueous solution in the anhydrous condition above 25° , as dihydrate between 25° and 18° , and as trihydrate below 18° . Of six commercial specimens three approximated to the anhydrous condition and three had, roughly, the composition of the dihydrate. They all contained traces of chloride, and in four traces of sulphate were also present. The use of the anhydrous preparation is recommended owing to its greater constancy and superior keeping qualities.

FERRIC FORMATE prepared from the pure hydrate by solution in excess of 25-per-cent. formic acid closely agreed in composition to $\text{Fe}_3(\text{OH})_2(\text{HCO}_2)_7 \cdot 4\text{H}_2\text{O}$. The six commercial specimens also corresponded to this formula. The "British Pharmaceutical Codex" ascribes to this salt the constitution $\text{Fe}_2(\text{HCO}_2)_6 \cdot \text{H}_2\text{O}$, but no preparation of this composition could be obtained even when large excess of 95-per-cent. formic acid was used. The salt obtained from a supersaturated solution containing excess of formic acid is a beautiful copper-red crystalline salt, which is easily soluble. It is not possible to dehydrate *in vacuo* beyond the salt corresponding to the dihydrate without losing formic acid, and the "B.P. Codex" direction to dry at 40°C. is liable to produce a more basic and less soluble product. The solubility ranges in water from 1 in 18.8 at 17°C. and 1 in 17.8 at 22°C. to 1 in 13.9 at 33.5°C. ; and in absolute alcohol from 1 in 21.8 at 19°C. to 1 in 13.1 at 23°C. Four of the commercial specimens were gritty powders (containing 28.6 to 28.7 per cent. Fe and 52.8 to 53.54 per cent. HCO_2). These and the fifth specimen, a light-coloured crystalline powder (29.1 per cent. Fe and 54.78 per cent. HCO_2), had evidently been made according to the Codex method. The sixth specimen consisted of copper-red crystals (28.38 per cent. Fe and 53.8 per cent. HCO_2), having an odour of formic acid. Four specimens contained traces of chlorides, and in two of these traces of sulphates were present also.

MAGNESIUM FORMATE had the formula $\text{Mg}(\text{HCO}_2)_2 \cdot 2\text{H}_2\text{O}$, the five commercial samples agreeing with this composition.

CALCIUM FORMATE corresponded in composition to the anhydrous salt $\text{Ca}(\text{HCO}_2)_2$. Five commercial specimens contained 64.6 to 68.7 per cent. HCO_2 , compared with the theoretical 69.2 per cent. Two (one containing 1.1 per cent. of calcium oxide and another 1.4 per cent. of calcium chloride) were described as "very impure."

QUININE FORMATE.—The basic formate, which is always used, is the monohydrate $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2 \cdot \text{HCO}_2\text{H} \cdot \text{H}_2\text{O}$. The "B.P. Codex" wrongly gives the formula as anhydrous. Five commercial specimens agreed well with this composition. The salt is stable under ordinary conditions and very soluble in water. The normal salt is unsuited for pharmaceutical purposes, as it loses formic acid.

STRYCHNINE FORMATE.—It was found practically impossible to prepare and preserve the product

$C_{21}H_{22}N_2O_2.HCO_2H.2H_2O$, containing two molecules of water. As stated by Lunan, the anhydrous salt is easily made by drying below 90° . It can also be prepared by drying *in vacuo* for three days. The weight-in-weight solubility in water was: at $19.5^\circ C.$, 1 in 3.27; at $24^\circ C.$, 1 in 2.52; and at $27^\circ C.$, 1 in 2.26. In absolute alcohol the part was soluble in 10 parts by weight at $18.5^\circ C.$, and 1 in 9.4 at $22^\circ C.$ Of five commercial specimens three consisted of very minute needles (82.37 to 83.08 per cent. alkaloid and 14.2 to 14.4 per cent. of formic acid), containing excess of acid and yielded dirty brownish solutions. The two others (79.6 and 79.53 per cent. alkaloid and 10.91 and 10.93 per cent. formic acid) were granular and approximated more closely to dihydrated salt. From these results the authors conclude it would be preferable to adopt the use of anhydrous strychnine formate.

DISCUSSION.

The PRESIDENT welcomed the paper as a contribution from the Research Laboratories of the Pharmaceutical Society.

Mr. T. TYRER paid tribute to the thorough verification of the results of previous workers. The ample bibliography was excellent, and saved much trouble. It was interesting to find that with one exception manufacturers of formates are free from blame. In the midst of a confusion of formula it was difficult to know which would pay best, not only from a mercenary point of view but as regards reputation. The paper showed that stability is attainable in formates even, by a simple process, with ferric formate. The censure of calcium formate was deserved, and arose from sending the salt out without examination. The speaker further called attention to the dangers and complications arising from the advocacy of "Pure Food Shops" to sell goods certified as pure by British analytical control.

Thanks were accorded to the authors.

Mr. HAMPSHIRE also read the next paper.

Sodium Thiosulphate Solutions.

By C. H. HAMPSHIRE, B.Sc., A.I.C., Ph.C., and
W. R. PRATT, B.Sc., A.I.C., Ph.C.

SOME time ago in the course of certain investigations volumetric sodium thiosulphate solution was used at regular intervals, and these standardised each time before use. It was noticed, however, that standard solutions of decinormal strength remained unaltered for many weeks even when exposed to daylight in bottles of white glass. Solution of sodium thiosulphate is generally considered to be unstable and to require frequent standardisation. The authors quoted from eight text-books showing how opinions differ as to the nature of the decompositions. It was accordingly thought advisable to investigate the matter, and the authors' communication was a record of some of the experiments made. The points to which attention was directed were the influence of (a) light, (b) time, (c) material of the bottles, (d) alkalies, upon the keeping properties of the solutions. The following solutions were accordingly prepared and kept as described. The solutions were checked at frequent intervals by means of decinormal iodine solution freshly prepared from recently sublimed iodine, also by means of freshly prepared potassium dichromate solution.

SERIES I.

Made with the pure recrystallised salt.

- A. N/10. Kept in white glass bottle exposed to daylight.
- B. N/10. Kept in amber glass bottle exposed to daylight.
- C. N/10. Kept in blue glass bottle exposed to daylight.
- D. N/10. +5 per cent. NaOH. Kept in white glass bottle exposed to daylight.
- E. N/10. +5 per cent. $(NH_4)_2CO_3$. Kept in white glass bottle exposed to daylight.
- F. N/10. Kept in white glass bottle in the dark.
- G. N/10. Kept in blue glass bottle in the dark.
- H. N/10. Kept in amber glass bottle in the dark.
- K. N/2. Kept in white glass bottle exposed to daylight.
- L. N/2. Kept in white glass bottle in the dark.

The titre of all the solutions was unchanged after a period of eight months.

SERIES II.

Prepared from the ordinary crystallised salt.

- M. N/10. Kept in white glass bottle exposed to daylight.
- N. N/10. Kept in white glass bottle in the dark.

No change took place in the titre of these after keeping for nearly four months.

SERIES III.

Prepared from ordinary photographic "hypo."

- O. N/10. Kept in white glass bottle exposed to daylight.
- P. N/10. Kept in white glass bottle in the dark.

No change in the titre of these solutions was observed at the end of four weeks.

In solutions A, C, E, F, G, H, K, and L a small amount of a white curdy deposit slowly formed. The microscope and chemical tests showed this to consist of minute crystals of sulphur. The solutions then contained small quantities of sulphate, but it was not found possible to detect the presence of sulphite. It thus appears that semi- and deci-normal sodium thiosulphate solutions may undergo some decomposition on keeping, but it is so slight that it does not render necessary the elaborate precautions prescribed by some writers for the preservation of the solution. The solution after keeping for eight months is quite reliable for volumetric analysis without restandardisation. The cause of deposition of sulphur is not known, but may be due to oxidation or to the action of carbon dioxide or to a simple decomposition brought about by the action of light. In the above cases the presence or absence of light or the colour of the bottles had apparently no effect in determining the deposition of sulphur. The nature of the primary product of the change remains also to be settled. Experiments on the keeping properties of more dilute solutions of sodium thiosulphate under ordinary conditions are in progress at the Research Laboratories of the Pharmaceutical Society.

DISCUSSION.

Mr. TYRER said that dilute solutions are the great trouble, and he should look forward with great interest to the results.

Mr. GRIER said he had found the deposit to vary with different samples of sodium thiosulphates.

Mr. FINNEMORE then read in abstract the following papers:

Mercuric Oxide as a Standard for Volumetric Analysis.

By L. ROSENTHALER and A. ABELMANN.

(This paper is abstracted on p. 119.)

Polenske and Reichert Values of Some Oils.

By G. D. ELSDON, B.Sc., A.I.C., and HERBERT HAWLEY, M.Sc., A.I.C.

(This paper is abstracted on p. 119.)

DISCUSSION.

Mr. TYRER, referring to the paper on mercuric oxide, took exception to the statement that samples of 99.95 per cent. were of exceptional purity.

Mr. FINNEMORE said he thought it was simply an expression of a pure substance.

The PRESIDENT next referred to the following paper:

Geranium Oils: Proportion and Composition of the Alcohols.

By W. H. SIMMONS, B.Sc. (Lond.), F.C.S.

THE following notes deal with some attempts to discover whether the formylation process actually determines the true percentage of citronellol, or whether it is of empirical value in comparing different geranium oils. This process, as recommended by MM. Jeancard and Satie, consists in heating 10 c.c. of oil with 20 c.c. of 98 to 100 per cent. formic acid in a flask attached to a reflux condenser for one hour on either a water-bath or a sand-bath. Either method of heating appears to have little effect on the result, but considerable bumping occurs when the mixture of oil and formic acid is boiled on a sand-bath. The addition of 2 grams of anhydrous sodium formate per 10 c.c. of oil enables the mixture to be boiled steadily on a sand bath, without affecting the

result. A determination of "total alcohols" by acetylation, and of "citronellol" by formylation of (1) Schimmel's geraniol, (2) Schimmel's "citronellol," and (3) a mixture of (1) and (2) in equal proportions, gave the following results:

	Total Alcohols	
	as Geraniol.	Citronellol.
	Per cent.	Per cent.
1. Geraniol	99.6	13.7
2. Citronellol	100.4*	83.4
3. Mixture of 1 and 2 in equal proportions... ..	—	47.3

* Calculated as citronellol, 101.6 per cent.

Formylation of a sample of palmarosa oil also gave an apparent citronellol content of 14 per cent. From these results it is evident that, assuming the above samples to represent 100 per cent. geraniol and 100 per cent. citronellol, formylation does not completely convert geraniol into terpene, nor does it completely esterify citronellol. To ascertain the value of the process as a comparative test, a number of African and Bourbon geranium oils have been examined by the two processes, with the following results:

Total Alcohols		Percentage Composition of Alcohols	
		Geraniol	Citronellol
Per cent.	Per cent.		
African	72.8	45	55
	70.0	39	61
	79.5	58	42
	69.3	54	46
	69.6	50	50
Bourbon	76.8	56	44
	73.0	31	69
	71.7	39	61
	70.4	34	66
	69.7	27	73

The figures given by MM. Jeancard and Satie are 37 to 45 per cent. of citronellol in the African, and 50 to 55 per cent. in the Bourbon oils, geraniol being present to the extent of 40 to 50 per cent. in the alcohols of the former, and 20 to 40 per cent. in the Bourbon, the balance being citronellol. Thus, while the statement of MM. Jeancard and Satie that Bourbon oil contains more citronellol than African oil is confirmed, the author does not find quite so much citronellol in Bourbon oil as they do.

From the results the process appears to be of considerable utility in judging of the quality of a geranium oil, and it is proposed shortly to investigate the subject further, using the phthalic anhydride method for separating citronellol from geraniol. The author also gave the corresponding figures obtained for two less common varieties of geranium oil—viz., (1) Corsican, 69.8 per cent. of alcohols as geraniol; and (2) Trappe de Staouëli, 71.5 per cent. In these cases the alcohols were composed of geraniol (1) 57 and (2) 61, and citronellol (1) 43 and (2) 39. An Asian oil contained 63.9 per cent. of citronellol.

The PRESIDENT explained that the paper was of considerable commercial importance owing to the great enhancement in value of geranium oils of recent years.

L'ENVOI.

The PRESIDENT then referred to personal letters he had received from Mr. Walter Hills and Mr. C. B. Allen, who were unable to be present owing to the state of their health.

Mr. FINNEMORE also referred to further telegrams of apology which had been received from Professor van Italie, Professor Bogert, Mr. Edmund Jones, and Mr. J. F. Tocher.

The PRESIDENT then moved a formal vote of thanks to the authors of all the papers.

Mr. R. WRIGHT seconded this motion, saying that the papers well reflected the progress of pharmacy,

and as a whole were worthy of the Jubilee meeting of the Conference.

Mr. T. TYRER, in supporting, referred to the marvellous way in which the time-table had been kept. This was largely due to the tact and good sense of the authors in reading their abstracts.

The motion was carried, and the members adjourned for luncheon.

The Closing Proceedings.

It was a quarter to three before the meeting was ready for the opening of the afternoon proceedings. There had been a crowd outside signing the declaration which is necessary for the Windsor Castle visit, and this had delayed the business somewhat.

The PRESIDENT called upon Mr. Suyver, one of the Dutch delegates, to address the meeting.

Mr. SUYVER thanked the Conference for the hospitable reception accorded himself and his colleagues, remarking that if on that occasion he could speak and be understood in Dutch, they would better understand his feelings.

PRESENTATION TO MR. PECK.

The PRESIDENT then stated that a very pleasant duty had fallen to him to perform on that occasion. It was to make a presentation to Mr. Peck, who for eleven years had served the Conference as its Hon. Secretary. During the whole of that period he had proved himself a man not only of very great ability in connection with scientific work, but of great diplomacy and tact. (Applause.) Under his management the work of the Conference had worked smoothly and well, and its members thanked him for raising it to the position it holds to-day. (Hear, hear.) It was said about ten years ago that the Conference was dying, but Mr. Peck gave it a little reviver, and they were in London celebrating its fiftieth year. On the occasion of his retirement they desired to present him with a token of the affectionate regard in which they held him. Mr. Peck would, of course, remain with them as an official, and before very long they would have him as President. The President expressed regret that Mrs. Peck was unable to be present on the occasion, but he desired Mr. Peck to convey to her an expression of the esteem in which he was held. If she could give Mr. Peck higher praise than they did, it would be a very great testimonial. (Laughter.) He asked Mr. Peck also to convey to her a little present together with their deepest affection. Concluding, the President called for three cheers for Mr. and Mrs. Peck, which were enthusiastically given.

Mr. PECK, on mounting the platform, was loudly and continuously cheered. In accepting the gold watch presented to him, and the diamond ring handed to him on behalf of his wife, he said that possibly he owed them an apology for resigning the secretaryship just immediately before the Jubilee, but he did not do so without mature consideration. He knew from the officers appointed last year that there was no excuse for his remaining longer in position. He took that opportunity of heartily thanking the Conference for allowing him, a country practising pharmacist, to have the unique opportunity of being so closely identified with some of the foremost men in pharmacy at the present day.

He had always maintained that in the choice of a President they ought, more or less, to consult the local Association or those who were going to invite them to meet in their town, and he was glad to say that co-operation had been useful in many ways. Continuing, Mr. Peck expressed his appreciation of the assistance he had received from Mr. Francis Ransom, Mr. Edmund White, and Mr. Horace Finnemore, and the pharmaceutical Press in the performance of his duties as Secretary. In conclusion, he said that notwithstanding all the changes through which pharmacy has passed, and the changes which have taken place in its personnel during the past fifty years, the Conference had been conducted on the same lines fixed for it by its worthy founders. It was his sincere hope that it would continue to serve pharmacy not only in Great Britain and Ireland, but in the Oversea Dominions. (Applause.)

ELECTION OF OFFICE-BEARERS.

MR. THOMAS TYRER proposed that the following be elected office bearers for 1913-14:—

President—Edward Henry Farr.

Vice-Presidents (who have been Presidents)—S. R. Atkins, C. Umney, N. H. Martin, C. Symes, E. M. Holmes, G. C. Druce, T. H. W. Idris, W. A. H. Naylor, T. Tyrer, R. Wright, J. F. Tocher, F. Ransom, W. F. Wells, Sir Edward Evans, and J. C. Umney; also Sir William Baxter, J.P., J. P. Gilmour, E. F. Harrison, E. Saville Peck, W. F. J. Shephard, and Edmund White.

Hon. Treasurer—D. Lloyd Howard.

Hon. General Secretaries—Horace Finnemore and Reginald R. Bennett.

Hon. Local Secretary—Cecil Owen.

Other Members of the Executive—T. O. Barlow, F. W. Branson, F. W. Gamble, C. H. Hampshire, C. A. Hill, T. Stephenson, J. A. Thomas, G. Whitfield, and H. Wilson.

Auditors—I. Bourdas and W. F. Gulliver.

The Conference, he remarked, had ever had one object, and that object had been kept steadily in view by each succeeding President and board of officers, and he hoped that object would remain unchanged during the next half-century. Mr. E. H. Farr, whom he proposed as next year's President, had never been seen climbing up the millionaire's ladder, but had quietly and steadily attended his work in pharmacy. (Applause.)

Sir W. BAXTER, in seconding, said that in the pages of the *C. & D.* there had appeared a series of interesting articles on the history of the Pharmaceutical Conference, centred round its past Presidents. These showed that in the past history of the Conference there had been great and distinguished men who loved pharmacy for its own sake, and who endeavoured to impart the greatest possible knowledge in order to make it greater than ever. From Daniel Hanbury to Sir Edward Evans all the Presidents had been great and distinguished men. He felt sure members must feel that they had added to the roll by appointing to the presidency Mr. Umney, who presided with such efficiency on that occasion. (Applause.) "May his shadow never grow less, and may he long enjoy the love, affection, esteem, and honour in which he is now held," was Sir W. Baxter's concluding expression of goodwill to Mr. Umney.

The office-bearers, as proposed, were then elected.

Mr. E. H. FARR, whose appearance on the platform was greeted with enthusiastic cheering, thanked the Conference for the honour done him by electing him to the distinguished office, which it would be his endeavour to fill to the best of his ability. He understood it was likely they would receive an invitation to meet at Chester next year. Chester was a lovely spot with delightful surroundings, and it was his sincere hope that he would have the pleasure of meeting many of them there next year. (Applause.)

INVITATION TO CHESTER.

Mr. W. F. J. SHEPHEARD, in extending to the Conference an invitation to meet at Chester next year, assured its members that they would receive from every individual pharmacist in that city a most cordial and hearty welcome. The city had been described as "Sleepy Chester," but he assured them that on one occasion an American Mayor described it as a place where they were kept going the whole time. "But," he added, with a twinkle, "there is one thing we have not been allowed to do, and that is to sleep." (Laughter.) He assured them the Local Committee would do their utmost to supply plenty of entertainment, and at the same time leave them plenty of time in which to sleep. (Laughter and applause.)

Mr. HAROLD WYATT (Liverpool) supported the invitation. Chester, he said, was anything but sleepy, for it formed one of the playgrounds of Liverpool. (Laughter.) From a spectacular and archaeological point of view it could be highly recommended, and if there was a capital wanted for North Wales it could be found in that city. (Laughter and applause.)

Mr. W. F. WELLS, as an Irishman, proposed that the invitation should be accepted. He remarked with some humour that Chester still claimed to possess her old wall, but how much of it was old and how much new he could not say. (Laughter.)

Mr. J. P. GILMOUR, in seconding, said it was in the

scheme of the eternal fitness of things that a Scotsman should follow an Irishman, because, as a matter of fact, Scotland was settled by the Scots who were then Irish. (Loud laughter.) Those who had studied those things were quite certain that all that was good and great in Scottish character was derived from Irish sources. (Laughter.) He did not suppose Scotland could compete, as regards antiquity, with the City of Chester, but he was certain that in flora it had surviving species from the garden of Eden. (Laughter.) This was perfectly true. It consisted of the tree of knowledge. (Laughter.) He was quite certain that in point of antiquity and beauty Chester was all that was claimed for it. (Applause.) A question as to the scale on which entertainments would be given, although these were exceedingly welcome, did not here arise. But when an invitation was conveyed in the generous and friendly spirit shown that afternoon, he, on behalf of the Executive Committee, could assure them that it was highly appreciated. (Applause.)

The invitation was unanimously accepted.

THANKS TO LOCAL COMMITTEE AND LADIES.

MR. THOMAS STEPHENSON proposed, and Mr. T. O. BARLOW seconded, a vote of thanks to the Local Committee and the Ladies Reception Committee. Both gentlemen spoke in terms of the highest appreciation of the hospitality extended to them as a result of the efforts of the ladies and gentlemen who co-operated with Mr. Edmund White, the Chairman, and Mr. W. J. U. Woolcock, the Secretary, of the Local Reception Committee.

The proposition was enthusiastically carried.

Mr. EDMUND WHITE, on rising to acknowledge, was hailed with a storm of applause. His remarks were in a humorous vein. As often happened in the world, he said, the other fellows did the work and he got all the glory. With regard to Woolcock, he was known to most of them as a talker chiefly. (Laughter.) He had been all over the country spouting about all sorts of things, and he liked it. (Renewed laughter.) Woolcock was not like himself, who always spoke under protest, and would rather not have anything to say at all. (Loud laughter.) But perhaps they did not know that Woolcock always worked as well as he talked. (Applause.) Then he had a way with the ladies which was quite inimitable. They thought that with him they were having their own way, but they were not. (Laughter.) Concluding, Mr. White commended his Local Committee for their hard work and obedience to orders. As an example of the latter quality, he would allow Woolcock two minutes in which to acknowledge the vote of thanks on behalf of the ladies. They would find he would not take more. (Loud laughter.)

Mr. W. J. U. WOOLCOCK, replying for the ladies, remarked that there was only one position in pharmacy that he had ever coveted, and that was the secretaryship of a local committee. Having attained to it and fulfilled its duties, he felt that he could simply retire to Chester and go to sleep. (Laughter.)

Dr. CHAS. SYMES then proposed a vote of thanks to the Pharmaceutical Society and its officers for the help given to the Conference.

Mr. T. M. CLAGUE seconded, with some clever remarks about the "benevolent grandmother" which the Society has proved itself to be.

Mr. W. G. CROSS and Mr. P. F. ROWSELL replied for the Pharmaceutical Society.

Mr. R. WRIGHT next proposed a vote of thanks to the President, who embodies, he said, all the virtues of all the past Presidents in a concentrated form.

Mr. E. M. HOLMES seconded, and caused some laughter by his wish that Mr. Umney's shadow would never grow less.

The motion was carried amid a scene of great enthusiasm, most of the audience rising and cheering Mr. Umney.

The PRESIDENT briefly replied. He said that all his friends had rallied round him with smiling faces and made his task an easy one.

The final vote of thanks was proposed by the President to the Hon. Secretaries, Mr. Finnemore and Mr. Bennett, who each replied in a few words.

It was now 3.50, and the members dispersed to meet again at the garden-party.

TRADE REPORT.

The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers receive the goods into stock, after which much expense may be incurred in garbling and the like. Qualities of chemicals, drugs, oils, and many other commodities vary greatly, and higher prices than those here quoted are charged for selected qualities of natural products even in bulk quantities. Retail buyers cannot, therefore, for these and other reasons, expect to purchase at the prices quoted here.

42 Cannon Street, London, E.C., July 23.

AS this section of our Trade Report closed for press on Wednesday evening, a full report of the drug-auctions and Thursday's market intelligence will be found in our Coloured Supplement. Meanwhile business has shown an improvement, and as our table below shows, the bulk of the price-changes are upwards. The German quinine-makers have advanced their price by $\frac{3}{4}$ d. per oz., this being rather less than anticipated in second-hands. Ferri quin. cit. and the other citrates have also been advanced. Atropine has also been advanced by 1s. 5d., and cocaine is dearer in one direction. In opium a good business has been done at again higher rates, principally for American account. Morphine, however, is unaltered. Other changes include an advance in caraway, coriander, and fenugreek-seeds. Shellac is still a rising market. Alterations on the easier side include arsenic, ammonia sulphate, lemon oil, and quick-silver (seconds). The principal changes have been as under :

Higher	Firmer	Easier
Atropine	Anise oil (star)	Ammonia
Caraway-seed	(c.i.f.)	sulphate
Citrates	Cumin-seed	Arsenic
Cloves	(c.i.f.)	Lemon oil
Coriander	Insect flowers	Quicksilver
Fenugreek	(open)	(sec. hands)
Ferri et quin. cit.	Stavesacre-seed	Quillaia (c.i.f.)
Opium	Turpentine	
Quinine		
Shellac		

A full report of the auctions is given in our Coloured Supplement.

London Markets.

ALMONDS.—All descriptions continue to remain very firm. Business has been done at up to 6l. 10s. per cwt. in Persian, while the value of Majorcas is 6l. 14s. Sweet B.P. almond oil is quoted by English pressers at 2s. 6d.

ANISE OIL (STAR).—The troubles in China have given a firmer tone to this article, sales having been made at 6s. 2d. per lb. c.i.f. for forward shipment, with buyers. Spot is quoted 7s. for "Red Ship" brand.

ANISEED.—There is only a small business doing at 25s. 6d. per cwt. for good Russian.

ARNICA-FLOWERS.—The new crop which is now arriving on the Trieste market is finding a ready market, good quality offering for shipment at 52s. 6d. per cwt. c. and f.

ARSENIC is still tending easier, best white Cornish powdered offering in ton-lots at 16l. 5s. in barrels and 17l. 5s. in kegs.

ASAFFETIDA.—A fair quantity has recently been disposed of at the more attractive prices prevailing.

ATROPINE has been advanced by 1s. 5d. per oz. to 13s. 3d. in contract quantities of sulphate. The crystals are also higher.

BALSAM TOLU.—Tending firmer owing to scarcity; 3s. 4d. net might buy a limited quantity.

CAMPOR (REFINED).—Sales of Japanese $2\frac{1}{2}$ -lb. slabs have been made at 1s. 4d. per lb. c.i.f. for September-October shipment, and $\frac{1}{4}$ -oz. at 1s. 5d. c.i.f. The arrivals from Japan comprise 225 packages refined camphor from Kobe and 375 cases crude from Keelung; also 225 cases refined and 40 cases crude *in tr.*

CANARY-SEED is firm owing to an export demand, and a fair trade has been done in cleaned River Plate at 99s. to 100s. per quarter, at 100s. for ordinary Morocco, and 105s. for good. Spanish is quoted 110s. to 120s. for good to fine extra bold.

CANTHARIDES.—New crop Russian flies are dearer at 3s. 10d. per lb. c.i.f. terms.

CARAWAY-SEED is dearer, as crop prospects are now not so good as were expected. Fair Dutch is quoted 26s. 6d. per cwt. on the spot.

CASCARA SAGRADA.—According to the New York drug-trade Press there has been a brisk demand on the Pacific Coast and in New York for several weeks past, but here there is only an occasional inquiry, with sellers of 1912 crop at 36s. and old bark at from 38s. to 40s. on spot.

CHAMOMILES.—The new Belgian crop is due the second week in August, a little later than usual. It is expected to be smaller than last year owing to cold weather and absence of sun; prices are likely to be higher than those at present ruling.

CINCHONA.—At auction on Tuesday 301 bales East Indian were offered, of which 260 packages sold at higher rates, the average unit being $\frac{3}{4}$ d. to $1\frac{1}{2}$ d., against $\frac{3}{4}$ d. at the previous sale. The prices paid were as follows: East Indian, Ledgeriana stem chips, $3\frac{3}{4}$ d.; hybrid chips, $4\frac{3}{4}$ d.; Succirubra, natural stem chips and shavings, $3\frac{1}{4}$ d. to $4\frac{1}{4}$ d.; branch, $2\frac{3}{4}$ d.; and root, $2\frac{1}{2}$ d. to $3\frac{3}{4}$ d. Officialis natural quilly chips, $3\frac{1}{4}$ d. to $3\frac{3}{4}$ d.; and spoke shavings, $3\frac{3}{4}$ d. per lb.; 165 bales Java were catalogued but not offered.

CITRATES.—The prices of citrates have been advanced a further 1d., making ferri ammon. cit. 2s. 1d., potassium citrate 2s. 1d., and sodium citrate 2s. 3d. per lb.; 28-lb. lots 1d. per lb. less in each instance.

CITRIC ACID remains unchanged at 1s. 10 $\frac{1}{2}$ d. per lb. for either English or foreign.

COCA-LEAVES.—At the Amsterdam auction last week offerings equal to 1,374 kilos. alkaloid sold at the average unit of 22.13 cents per $\frac{1}{2}$ -kilo, as compared with 21.64c. in June.

COCAINE.—One of the makers has advanced his price of hydrochloride in the usual contract quantities of 175 oz. to 6s. per oz., and others quote 5s. 10d.; second-hands offer at from 5s. 8d. to 5s. 9d. An advance of 5 per cent. was paid for coca-leaves at Amsterdam last week.

COPAIBA is unaltered at from 2s. to 2s. 2d. per lb. according to quantity and quality.

CORIANDER-SEED is dearer; good Morocco has been sold at 17s. 6d. per cwt., and 18s. is now asked.

CUMIN-SEED.—Business is slow, but prices unchanged at 23s. 6d. to 25s. per cwt. for common to ordinary Morocco and 26s. to 28s. for fair to good. The quotation for Malta for shipment is higher at 31s. per cwt. c.i.f. terms.

DRAGON'S-BLOOD.—Eight cases have arrived per India from Bombay.

EUCALYPTUS OIL.—It is believed that prices are likely to advance shortly; from 1s. 5d. to 1s. 6d. per lb. is quoted for 70 per cent. cineol.

FENUGREEK-SEED is dearer, with sales of Morocco on the spot at 10s. 9d. to 11s. 6d. per cwt. East Indian is offering at 10s. c.i.f. terms.

FERRI ET QUIN. CIT. has been advanced $\frac{1}{2}$ d. per oz. by makers, whose list prices in 25-oz. tins is 6d. per oz., 100-oz. lots $5\frac{1}{2}$ d., and 500-oz. lots $5\frac{1}{4}$ d. per oz., with the usual charges for small packages.

GALLS.—The quotation for Persian blue on the spot is from 46s. to 47s. per cwt.

HONEY.—A report received in regard to the Californian honey-crop estimates that it will be between 10 and 20 per cent. short of a normal yield. Consequently holders of last season's crop are very firm in their ideas of price.

No definite offers of the new have yet come to hand, and in response to a cable to quote new, old crop only was offered at the extreme prices of between 50s. and 70s. per cwt.

INSECT-FLOWERS.—With a fair demand for open flowers, Trieste reports holders as firmer, prices for this description having advanced 2s. 6d. per cwt., at from 74s. to 78s. as to quantity and seller. The finer grades of flowers have declined recently, and prices are more in accord with open flowers, which have probably reached bottom. Closed are quoted from 115s. 6d. to 125s. and half-closed 85s. 6d. to 115s. per cwt. c. and f., as to quality.

LEMON OIL.—The market remains inactive, with a continued easier tendency. New crop for January to June 1914 delivery is offered at 12s. to 12s. 6d. per lb. c.i.f. U.K. ports for guaranteed genuine quality, and for immediate shipment from 17s. 9d. to 18s. 8d. c.i.f. are representative quotations.

LIME OIL.—For good West Indian distilled 2s. 9d. is wanted, and for slightly off-colour a retail sale was made at slightly less. Hand-pressed is nominal in the absence of supplies.

LINSEED is without change; the quotation for good clean seed is from 52s. 6d. to 57. 6d. per qr.

MENTHOL is about steady at from 20s. to 20s. 6d. spot for either Kobayashi or Suzuki; and in combination with oil, sales have been made at 21s. c.i.f. for October-November and 20s. c.i.f. for November-December shipment. At auction five cases Kobayashi were offered without reserve, the result of which is given in our Coloured Supplement. Market has been quiet pending this sale.

MORPHINE.—The advance in opium has had the effect of steadying prices of makers, which for the hydrochloride in fair average wholesale quantities are from 9s. 3d. to 9s. 6d. per oz.

NEROLI OIL is quoted at rather firmer prices in some quarters, finest Bigarade petal extra offering at 8s. per oz.

OPIMUM.—With a good business in progress in Smyrna, where 200 cases have changed hands, principally on American account, prices have further advanced, and since this was initiated a fortnight ago the appreciation is fully 1s. 6d. per lb. from the lowest point. Up to 16s. per lb. c.i.f. has been paid for 11 per cent., at which further business could be done. From Constantinople 10½ per cent. is quoted 15s. 9d. c.i.f. The spot market is unchanged at 19s. for good druggists'. Practically all the spot supplies of Persian are still off the market; from 20s. to 22s. is the nominal quotation.

OTTO OF ROSE.—Several reports received from Bulgarian sources point to the new crop, the distillation of which is now over, as being very good; in fact, better than last year. Owing to the chaos prevailing in Bulgaria, however, commerce is practically at a standstill and there is no communication with this country. Genuine otto of last year's crop is offered in London at 60s. per English oz. A fair amount of business has been done in 1910 crop, ex spot stock.

PEPPERMINT OIL.—Most of the agents still remain without offers of tin oil, and the latest advices from the other side are of a bullish character. The spot stocks are practically *nil*, and probably over 13s. would have to be paid for a good brand. Business has been done in H.G.H. at 14s. 6d. for forward shipment, the spot price being 15s. Sellers of Japanese for forward shipment quote 6s. c.i.f., with cable orders at 5s. 4½d. refused.

QUICKSILVER.—The principal importers' price is unchanged at 7l. 5s., and in second-hands 7l. 1s. 6d. is quoted.

QUILLAIA.—In Liverpool fair average quality for shipment is quoted 26l. 10s. per ton c.i.f., offers of 10s. less having been refused.

QUININE.—The German makers have now fixed their official price at 11½d. per oz. for sulphate in bulk, an advance of ¾d. per oz. *Howards* have also advanced their quotations in bulk to 1s. 1d. per oz., and to 1s. 3d. in 1-oz. vials in not less than 1,000-oz. lots. The prices of salts other than sulphate have also been advanced, hydrochloride in 100-oz. tins being 1s. 3½d. It was

thought that the makers' prices would have been fixed at 1s. immediately the bark-quinine agreement was signed, but their policy is evidently to "hasten slowly," in order not to give undue leverage to the second-hand market, in which a subdued but firm tone has prevailed, business in limited quantities of the usual brands of German sulphate having been done at 11d. per oz., at which there were further sellers on Wednesday. Unless anything unexpected happens, a quiet but firm market is now looked for, as most consumers are well booked up, and further requirements on their part can be supplied from the cheaper second-hand stocks.

STAVESACRE-SEED is firmer, owing to the considerably reduced stocks in Trieste and the producing districts. For shipment from 38s. to 39s. per cwt. c. and f. is quoted.

SULPHUR.—Pending the arrival of the next boat, due in a fortnight, spot supplies are temporarily scarce. Flowers offer at 6l. 15s. per ton ex wharf, and roll 6l. 10s. Liverpool quotes flowers and roll at 5l. 10s. per ton c. and f.

WAX, BEES'.—Recent heavy arrivals in Liverpool have given a dull tone. Conakry has been sold at 7l. 5s. to 7l. 2s. 6d., and Gambia is steady at 7l. 15s. per cwt.

Buchu.

In order to provide for the protection and conservation of the buchu-leaf industry, a draft Ordinance has been published in the Cape of Good Hope "Official Gazette" (June 6), which it is proposed to introduce into the Provincial Council. This Ordinance consists of nine clauses, the first of which gives the definition of buchu (*Barosma betulina*, *crenulata*, and *serratifolia*). Clause 2 states that buyers must take out an annual licence (the amount of which is not yet fixed), and Clause 3 states that every purchaser under a buyer's licence is to keep a register, in which he shall at the time of the purchase enter the quantity purchased from time to time, together with the following particulars: (a) The date of purchase; (b) the weight and the price paid; (c) the name, residence, and occupation of the vendor; (d) the name of the farm or locality on which the buchu was gathered; (e) the nature of proof adduced by the vendor as to lawful possession of the buchu sold; (f) in respect to buchu picked on public lands, the date, number, and place of issue of picking permit held by the vendor; (g) in respect to buchu picked on private lands, the date and name of the person signing any permit to pick. Another clause states that a close season may also be proclaimed, during which buchu may be gathered, and the penalty for contravention is the liability to a fine not exceeding 50l. or imprisonment not exceeding six months. A copy of the draft Ordinance may be seen at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, London, E.C.

Heavy Chemicals.

There is little that is new or of special interest to be reported as regards the heavy-chemical market. Trade on the whole is rather quiet, but the general tone of the market keeps up well. Values are steadily maintained.

SULPHATE OF AMMONIA keeps dull, but prompt parcels offering are being taken up a little better. Forward business continues as recently reported. Present nearest figures: London terms, 12l. 2s. 6d.; Leith, 13l.; Liverpool, 12l. 17s. 6d.; and Hull, 12l. 15s.

LEAD-PRODUCTS are very strong in tone, although at the moment they show no quotable change. Advances, however, seem quite likely.

ALKALI-PRODUCE.—Bleaching-powder has been moving more freely for export, and is steady on bases of 5l. 7s. 6d. to 5l. 15s. per ton for softwood casks free on rails. Caustic soda in fair demand, although a little quieter; 76 to 77 per cent. 10l. to 10l. 7s. 6d., 70 per cent. 9l. 5s. to 9l. 12s. 6d., and 60 per cent. 8l. 5s. to 8l. 12s. 6d. Ammonia alkali, 53 per cent., in better request at 2l. 17s. 6d. to 3l. 10s. per ton free on rails for home trade. Saltcake steady at 42s. 6d. Soda crystals 2l. 2s. 6d. to 2l. 5s. in bags free on rails. Yellow prussiates of potash and soda are quiet at 6d. to 6½d. for potash and 4d. to 4½d. for soda. Chlorates of potash and soda in fair average request at 3½d. to 4d. per lb. Hyposulphite of soda quietly steady at 5l. 7s. 6d. to 5l. 17s. 6d. per ton for ordinary crystals in casks. Deliveries in 1-cwt. kegs vary from 5l. 17s. 6d. to 8l. per ton, according to quality and quantity. Silicates of soda move steadily at unaltered figures; 140° Tw. 4l. 10s. to 5l.; 100° Tw., 4l. to 4l. 10s.; and 75° Tw., 3l. 12s. 6d. to 4l. 2s. 6d., according to quality, quantity, and destination.

Late News.

42, Cannon Street, London, E.C.

July 24, 1913.

Besides the report of the British Medical Association Exhibition which is appended, the following items reach us this morning, and are mentioned in the briefest possible space:

Cricket.

May & Baker's eleven defeated the B.D.H. eleven at Crofton Park on July 12 by ninety-seven to sixty-five. This is the B.D.H.'s first loss this season.

At Leeds on the same date eleven willow wielders from the staff of W. B. Cartwright, Ltd., made fifty against the forty of their opponents from Harrison & Waide's.

Insurance Dispensing.

We shall not attempt to summarise the items received, but shall deal with them next week. They include a statement by the Flintshire Insurance Committee as to the payments of chemists' accounts, which is sent to us by Mr. J. B. Francis (Wrexham). We also learn by telegraph from Mr. Goode (Southend-on-Sea) that Essex chemists have been paid 90 per cent. of their accounts up to July 14—smart work! The Liverpool Local Medical Committee's Formulary also lies before us. Dr. W. T. D. Allen, 111 Mount Pleasant, Liverpool, is mentioned in the preface, but no price.

B.P.C. Windsor and River Trip.

The first of the four hundred or more who have gone on this trip to-day began to gather at Paddington Station about an hour before the scheduled time of starting—10.15 A.M. The weather was dull, but the sun is shining brightly as we write. The member of our staff who is with the party telegraphed after luncheon as follows:

Windsor, 1.30 P.M.

Party numbers 438. Suffragist guarantees not required after all. First party finished lunch at one-fifteen. Bascombe replied to toast of Committee and ladies. Weather perfect, excellent view from Round Tower. Excellent lunch at separate tables, with quick service.

Personal.

MR. JAMES MEADOWCROFT, chemist, Rock Street, Bury, died on Wednesday. He was one of the oldest tradesmen in the town, and had been ill for some considerable time.

THE LATE MR. EVAN GRIFFITHS, chemist and druggist, Union Square, St. Columb, Cornwall, left estate of the gross value of 1,674*l.* and 1,126*l.* net.

THE LATE MR. JAMES THOMAS, chemist and druggist, New-castle Emlyn, Carmarthen, left estate of the gross value of 5,157*l.* and 4,951*l.* 15*s.* 10*d.* net.

MR. MATTHEW A. ADAMS, F.R.C.S., F.I.C., public analyst for Maidstone and Rochester, left estate of the gross value of 37,682*l.* 13*s.* 2*d.*, of which 33,359*l.* 1*s.* 9*d.* is net personality.

THE LATE MR. WILLIAM PARSONS, chemist and druggist, Beckenham, Kent, left estate of the gross value of 9,548*l.* 9*s.* of which the net personality has been sworn at 2,563*l.* 1*s.* 7*d.*

ALDERMAN J. B. FOGGITT, J.P., Ph.C., and Mrs. Foggitt (Southport), son and daughter-in-law of William Foggitt, J.P., were presented to the King and Queen when they visited Southport.

MR. S. JAMIESON returned to London from his sojourn in the United States. He spent two months in the biological and pharmaceutical laboratories of the H. K. Mulford Co., Philadelphia, the company having appointed him to manage their interests in the British Isles.

British Medical Association.

The eighty-first annual exhibition under the auspices of this Association is being held in the Corn Exchange, Brighton, this week. The exhibition was formally opened on Tuesday by the Mayor of Brighton, who was assisted by Dr. W. Ainslie Hollis, the President-Elect of the Association. Probably owing to the close proximity of the International Congress of Medicine, the exhibitors were not as numerous as on previous occasions, but the interest displayed in the various products did not in any way suffer in consequence. We append notes on the more important exhibits of pharmaceutical and allied products:

The Apollinaris Co., Ltd., exhibited in addition to Apenta water the large stone bottle of Apollinaris water. The advantages claimed for this style of packing is that it keeps much better than soda water in syphons, and it is cheaper than the ordinary form, and the bottles contain 40 per cent. more of the table water.

Armour & Co., Ltd., who were represented by Messrs. Martin and Davis, exhibited their various preparations in an artistic manner, which attracted much attention. A pituitary

liquid and pituitary powder are new products, the latter being available in three forms, the active principles of the anterior and posterior lobes respectively, as well as that made from the whole lobe. A preparation which would suggest for itself a large demand is grape juice, the pure, unfermented juice of the grape, which is being increasingly appreciated by those who are troubled with uric-acid diseases of any kind. Numerous specimens of animals' glands caused considerable attention. Armour's extract of beef and "Vigoral" cubes of beef tea and chicken broth were noticeable features of the display, besides pepsin and various glandular extracts.

W. H. Bailey & Son showed hospital furniture and surgical instruments.

The Bayer Co., Ltd., made a special show of a synthetic hydrastinine hydrochloride. The scarcity of the root makes this product particularly noteworthy. A new preparation called Phosphocose was also on view. This is a product of meat albumose with sodium glycerophosphate. Similar products named Guycose and Irocose, containing somatose with calcium and guaiacol, and somatose with iron were also exhibited, as well as Adalin, Protargol, Alpin, and Somatose-Brand & Co., Ltd., exhibited besides their well-established invalids' nutrients a new product called Ferrocarnis, which is an iron tonic food combining the tonic properties of iron with the stimulating properties of raw meat juice.

Bovril, Ltd., exhibited bovril and invalid bovril. The latter product is specially concentrated and contains a high percentage of proteid.

Cadbury Brothers, Ltd., exhibited cocoa in its various stages of production, and their well-known chocolate preparations came in for much attention.

G. W. Carnrick & Co. are specialising in organo-therapeutical preparations. These hormone products include Hepatogen (liver extract), Hormotone (a combination of tonic hormones made from the spleen, thyroid, etc., for use in "run-down conditions," sub-oxidation, neurasthenia, etc.), and a spleno-pancreatic preparation called Kinazyme.

Horlick's Malted Milk Co. had a circular exhibit which showed off the well-known malted milk to advantage. This preparation is also available in the form of tablets, adaptable for dissolving in the mouth from time to time as required. Attention was also directed to the patent feeder, by means of which the flow of air into the bottle may be carefully regulated.

Ingram & Royle, Ltd., exhibited "Mattoni," the pure table water, Rubinat aperient water, Vichy Célestins, and also Carlsbad Sprugol natural salt and water. Hunyadi Janos was of course in evidence.

Lemco and Oxo made a feature of their nursing Oxo.

The Liverpool Lint Co. called attention to "Vulnoplasi," a self-contained dressing, requiring no pins or bandages; "Impermiettes," which appear to be rapidly replacing ordinary rubber-coated sheeting, the dressing not being affected by any of the chemicals used in surgery, and it can be sterilised by boiling without injuring the fabric. A hospital variety of lint was pointed out as being unique as far as lints are concerned.

Oppenheimer, Son & Co., Ltd., had a stand, in charge of Mr. Wilson, which was very tastefully arranged. Several new products were shown, among them two colloid solutions of silver and mercury—"Collosol Argentum" and "Collosol Hydrargyrum." "Thymotussin," a new preparation for the treatment of whooping-cough, is of interest, as also a new product under the name of Grind Elin, which represents a combination of grindelia robusta, potassium iodide, trinitrin, and tincture of euphorbia. Acetosol "Pulverettes" are new, and as the name implies, consist of acetyl-salicylic acid in "powder-pill" form. Many other preparations were exhibited.

Parke, Davis & Co.'s exhibit was exceptionally artistic, and excited much attention. The products were grouped on some massive old furniture with a most pleasing result. Prominence was given to phylacogens, which are bacterial derivatives that may be regarded as modified vaccines, and are creating considerable interest in the medical profession. We note that the strength of intra-diastase has just been doubled, so that it is now capable of digesting 300 times its own weight of starch. It occupied a prominent position on the stand, and practical demonstrations of its amylolytic properties were given. Other preparations exhibited were adrenalin, codrenine, pituitrin, thyroprotein, and thyroid-ectin were noticed, besides a series of vaccines prepared at St. Mary's Hospital under the supervision of Sir Almroth Wright, including a new product termed "Pollaccine," for the prophylactic and curative treatment of hay-fever. The diagnostic outfit for use with this preparation is particularly ingenious. In the medicine case section of the exhibit was a special cholera outfit made to the specification of Dr. Leonard Rogers, and containing apparatus for taking the specific gravity of the blood according to the method suggested by Dr. Lloyd Jones; and the treatment of the disease by hypertonic salines and oral

administration of permanganates proved to be of particular interest to medical practitioners from abroad. Mr. Hickey and other representatives of the firm had charge of the stand.

The Charles H. Phillips Chemical Co. exhibited their well-known milk of magnesia and phospho-muriate of quinine compound.

The Saccharin Corporation Co., Ltd., showed a comparatively new preparation, for which a great future is predicted—viz. Irwalin. This is a valerian derivative, and is a substitute for morphine, being quite harmless. Dry diamalt was also shown. It is a soluble powder for the extemporaneous preparation of extract of malt, and is particularly active. Nevoceine seems to be more used than ever, and occupied a prominent position in the exhibit along with Perganol, the H.O. preparation.

The Sanitas Co., Ltd., occupied a prominent position in the Exhibition, and the products of the company were arranged to the best advantage. Sanitas "Bactox," a coal-tar preparation having a germicidal coefficient of 20, according to the Rideal Walker Test, was being featured. Other interesting exhibits included an ingenious spittoon for consumptive patients, numerous lamps for Formalin fumigation, a patent preserved hydrogen peroxide solution, and "Bactox" vaporisers, which are very suitable for sick-rooms.

G. H. Zeal showed clinical thermometers, including the "Repello" clinical. A feature of the thermometers is that the normal glass which is used in their construction prevents contraction and ensures accuracy.

Zimmer & Co., Ltd., gave prominence in their exhibit to "Validol," which acts particularly well as a preventive of sea-sickness and as a stimulant in certain gastric disorders.

Virol, Ltd., had a neatly arranged exhibit of their preparation.

Exhibits of their special products were also made by the British Commercial Gas Association, Brusson Jeune Bread, Cercbos, Ltd., Claudius Ash, Sons & Co., Ltd., Down Bros. Ltd., Droitwich Spa, Friedrichshall Water, Jeyes' Sanitary Compounds Co., Ltd., Keen, Robinson & Co., Ltd., Liverpool Lint Co., Mayer & Meltzer, Milo Food, J. Nesbit-Evans & Co., Nestlé's and Anglo-Swiss Co., Condensed Milk Co., Pridcaux's Casein Co., Ltd., Scholl Manufacturing Co., Ltd., George Spiller, Ltd., R. B. Turner, and R. H. Woodland & Sons.

MINOR EXPERIENCES.

The Minor at Edinburgh.

D. G. (13/31) states that he entered 4 Duke Street Lane, Edinburgh, feeling anything but comfortable. His subsequent record in the examination showed that his trepidation was uncalled-for.

DISPENSING consisted of—

Acid. arseniosi gr. $\frac{1}{6}$
Ft. pil. Mitte xxiv. Silver.

Sig.: j. t.i.d.

Ext. ergotæ gr. iij.
Ol. theobrom. q.s.

Send six suppositories.

One to be used every three hours.

Bismuth. carb. ʒi.
Menthol. gr. vj.
Sodii bicarb. ʒi.
Pulv. tragac. gr. vj.
Aquam ad ʒvj.

Sig.: A tablespoonful three times a day, after food.

Zinci oxid. 1.0
P. acid. borie. 1.0
P. amyli 8.0

Mitte ʒi.

The dusting-powder.

Make a hypodermic solution so that 10 minims equals $\frac{1}{100}$ gr. hyoscin. hydrobrom. Send ʒiv.

I started with the suppositories, making for seven, but only five turned out well. When I saw that one was not very elegant I began to think that I was down. However, I deemed it wiser to go on with the pills and re-mould the suppository at the end. The examiner checked the arsenic and asked me if I was making twenty-five. The mass weighed $37\frac{1}{2}$ gr., so I took off $1\frac{1}{2}$ gr. Having silvered pills only once before, I did not feel too confident, but they came out all right. I took plenty of time over the mixture, first powdering the menthol, which operation the examiner watched. As there was no flask in my division, I had to ask for one. The examiner asked me if a test-tube would

do, but I said it was too small, so a flask was sent for. I then weighed $\frac{1}{2}$ gr. of the hyoscin hydrobromide, dissolved it in 500 minims of the sterilised water, and took 240 minims. The examiner questioned me on my calculation, but I stuck to what I had done, and he said I was quite right. The dusting-powder was the last, my calculations being for the ounce of 480 gr. At about 12.45 p.m. the examiner asked if I was finished. I answered that one of the suppositories had not come out very well, and that I was re-moulding it. He told me not to mind—that five were a good example for him.

CHEMISTRY.—First I had to estimate the number of grams of sodium thiosulphate in 100 grams of solution. I had to make up my own iodine solution. The answer came out as 2.2 per cent. The salt given me contained potassium, ammonium, oxalate, phosphate, and a trace of a chloride.

If I was nervous the first day, I was ten times worse when attending for the oral portion of the examination. My first subject was

BOTANY, where I had to draw a sketch of a slide (a three-year-old dicot. stem). My fingers refused to move, and I think the sketch looked more like a spider's web. Professor Bower remarked that it was very vague. He then asked me what medullary rays consisted of and what use they are. Then a root was shown and questions asked as to its nature and the uses of food-material in the root. I had also to classify a liliaceous plant and describe the flower, but I could not answer as I was shaking so much. The first specimens I had to recognise included yew, stramonium, colchicum, black mustard, bryony, henbane, spearmint, and rue. It was quite a relief to go to

PRESCRIPTION-READING.—After writing out in full Latin a prescription written in English, I had to do two calculations—viz., "Send 8 oz. of a 1-per-cent. solution of silver nitrate" and "1 oz. of solution adrenine chloride. 1 in 6,000." Next came two prescriptions to be read, one in Latin and the other in English. The examiner then took me on doses, which included acid. citric, acid. hydrocyanic, croton oil, sodium nitrite, potassium permanganate, zinc sulphate, copper sulphate, liq. arsenicalis, liq. atropinæ, ammonium carbonate, caffeine, and caffeine citrate.

CHEMISTRY was my next subject, when I had the same examiner as in practical work. He began by telling me there was no chloride in my salt. I was asked to write down the formula in the preparation of acetamide, beginning with acetic acid; then to name the oxides of nitrogen. "How is nitrogen pentoxide prepared?" Then came questions on the preparation of sulphur trioxide, also of hydrogen peroxide and glycerin. "What is a soap?" "Do you know of any insoluble soaps?" I named lead, mercury, and zinc. "Name the hydrides of phosphorus." I could only mention phosphine. "How would you prepare pure phosphine?" "What is salicylic acid?" "What is meant by *ortho*?" I could not tell, so he told me to write down the benzene ring, then the graphic formula for benzoic acid and that for salicylic acid. "How do you prepare chloroform?" By this time I was quite cool.

MATERIA MEDICA, my favourite subject, followed. I was shown Rio ipecacuanha. "Is it official?" "Which part contains the alkaloids?" "Do you know any other variety?" I was also handed some Cape aloes and asked the colour-reactions for the various aloes. Then a number of barks were shown, including *Prunus serotina*, quillaia, red cinchona ("Is it official?"), coto ("Is it a cinchona?"), and cusparia. Questions on some specimens of almonds followed. "How many kinds are official?" "Is there any difference in the fixed oil?" "What special substance does the bitter almond contain?" A test for the purity of almond oil was asked for. "What is the test called?" I was shown some guaiacum resin, belladonna-root, and cascarrilla. "Name constituents." The examiner told me I had done very well indeed.

PHARMACY.—The examiner began by asking about the conditions regarding the sale of poisons in Part I. and Part II. of the Schedule. I was shown vin. antimonial and asked its strength; also how to make vin. ipecac., and its strength and the strength of the extract. Then similar questions on vin. colchici and vin. ferri. "How are ung. belladonnæ and tr. bellad. prepared?" with strengths; also the preparation of zinc and mercury oclates. "Why does olive oil become solid?" "Does almond oil go that way?" "State the melting-points of beeswax and paraffin. durum." Hyd. c. cretâ was shown me, and I was asked its strength. "In what state is the mercury?" The strengths of liq. trinitrini and the tabellæ and of hydrogen peroxide were asked. "How would you make liq. bismuthi?"

When shaking hands with the Chairman I was told I had made very good marks. All throughout the examiners were scrupulously fair, giving me plenty of time to answer their questions.

Thursday's Market News.

London Drug-auctions.

Commercial Sale Rooms, Mining Lane, July 24.

A FAIR quantity of new and second-hand drugs was offered, but considering that no further sales will be held for a month, the demand was rather poor. Cape aloes sold slowly at a decline of from 1s. to 1s. 6d. per cwt. on firsts. Sumatra benzoin sold steadily, and private demand is principally jobbing, while arrivals are small. Buchu is neglected, but prices are unchanged. Balsam tolu is scarce and firmer again. Cardamoms, on the average, were steady, opening cheaper but closing at a recovery. Cascarilla brought famine rates for common quality. Cuttlefish bone was in better demand. Croton-seed sold "subject" at lower rates. Good reboiled dragon's-blood is scarce and wanted. Elemi and gamboge neglected. Jamaica honey was barely steady, importers meeting the market. Matto Grosso ipecacuanha, on the other hand, brought an advance of fully 6d. per lb., other descriptions being neglected. Menthol without reserve brought satisfactory prices. Rhubarb quiet but steady, as was grey Jamaica sarsaparilla. Native Jamaica is now in large supply and with further arrivals, buyers hold off. Common Tinnivelly senna was unaltered. Both West and East Indian tamarinds are reported to be short crops this season, and firm rates are being paid. Jamaica bees' wax was 5s. dearer, as compared with the previous sale, but firm, with private rates paid in the interim; full prices were paid for Madagascar and Australian was steady. The following table shows the quantity of goods offered and sold:

	Offered	Sold		Offered	Sold
Aconite root.....	20	0	Insect flowers	4	0
Aloes—			Ipecacuanha—		
Cape	48	28	Cartagena	4	0
Curacao.....	5	0	Matto Grosso ..	19	13
Socotrine (kegs)	33	0	Minas.....	5	0
Zanzibar (cases)	51	0	Jalap	45	0
Angelica root	15	0	Kamala.....	2	0
Anise (Russ.)	20	0	Kola	3	0
Annatto-seed	25	0	Lemon oil.....(cs.)	5	0
Ant-eggs	67	0	Lemongrass oil		
Balsam peru	2	0	(dms.)	14	0
Balsam tolu.....	5	0	Lime-juice	30	0
Bay oil	3	0	Menthol.....	5	5
Belladonna-root ..	3	0	Myrrh.....	22	0
Benzoin—			Olibanum	20	0
Palembang	20	0	Orange oil	3	0
Siam	16	0	Orange peel	33	0
Sumatra.....	163	52	Orchella-weed	40	*40
Buchu.....	29	0	Orris (Mogador) ..	2	2
Calumba	44	0	Papain	8	0
Camphor (Jap. ref.)	5	0	Pomegranate peel	35	0
Cannabis indica ..	4	0	Poppy seed	40	0
Cardamoms & seed	206	128	Puree	34	0
Cascara sagrada ..	209	0	Quince-seed	17	0
Cascarilla	5	5	Rhubarb (China) ..	30	5
Casein	76	76	Sandalwood	50	0
Cassia fistula	14	4	Sarsaparilla—		
Chiretta	8	0	Grey Jam.....	20	20
Coca-leaves	80	20	Lima-Jam.	3	0
Cod-liver oil (Newf.)	4	0	Native Jam.	37	3
Colocynth	33	0	Senna and pods—		
Copaiba (dms.) ..	2	0	Alexandrian.....	63	16
Coriander	6	*6	Tinnivelly	169	147
Croton-seed	27	27	Simaruba bark ..	16	0
Cubebs	10	0	Squill	35	0
Cuttlefish-bone ..	111	60	Stavesacre.....	9	0
Dragon's-blood	14	1	Tamarinds—		
Elemi	49	0	West Indian	48	7
Ergot	18	2	Tonka-beans	5	0
Fennel-seed	60	0	Tragacanth	16	0
Gamboge	46	0	Turneric	272	0
Gentian	14	14	Wax (Bees')—		
Guaiacum	26	0	Australian	14	9
Gum acacia	55	0	China	8	0
Hellebore root.....	68	0	East African	14	0
Honey—			East Indian	107	0
Australian	10	0	Jamaica.....	8	4
Californian	28	0	Madagascar	14	14
Hawaii	10	0	Mombasa	12	0
Hayti.....	27	26	Morocco	33	0
Jamaica.....	118	72	Mozambique.....	117	0
New Zealand	73	12			
St. Lucia	10	0			

* Sold privately.

The next drug auctions will be held on August 21.

ALOES.—Cape was about 1s. to 1s. 6d. cheaper with a great disparity in price between firsts and seconds. Mossel Bay,

on the usual 20-per-cent. tares, sold as follows: Fair to good bright firsts, 43s. to 43s. 6d.; good seconds, 37s. to 38s.; ordinary softish seconds, 34s.; common drossy, 31s. to 32s.; and common mixed with dirt, 28s. 6d. per cwt.

BENZONIN steady, with only small supplies coming forward; 38 cases Sumatra sold at from 6l. to 6l. 10s. per cwt. for ordinary seconds, and for 14 cases of good fair seconds from 7l. 5s. to 7l. 12s. 6d. was paid.

BUCHU.—No sales were made, 23 packages being bought in, the value of round being from 5s. 4d. to 5s. 9d. for ordinary slightly yellowish and stalky to good green clean. Greenish longs were limited at 5s.

CARDAMOMS sold at irregular rates, but prices on the average were steady, and the better selection brought an improved demand, probably in view of autumn consumption. The following prices were paid: Ceylon-Mysore, extra bold pale long, 4s. 9d. to 4s. 11d.; good bold pale to fine pale, 4s. 3d. to 4s. 7d.; medium and bold pale, 3s. 9d. to 3s. 11d.; small and medium, 3s. 2d. to 3s. 6d. *Splits*, extra bold fine pale, 3s. 9d. to 4s.; extra bold pale, 3s. 3d.; small ditto, 3s. to 3s. 1d.; good brown and split, 3s. 4d.; ordinary, 2s. 6d. to 2s. 7d.; ordinary to fair seed, 3s. 9d. to 3s. 11d. Indian from Calicut, extra bold palish, 4s. 11d. refused; good bold palish long sold at 4s. 9d., and medium to bold 4s. 2d. to 4s. 3d. per lb.

The exports from Ceylon during the period January 1 to June 30, 1913, amounted to 235,414 lb., against 217,868 lb. in 1912, 354,158 lb. in 1911, and 398,049 lb. in 1910. The half-year's exports to the U.K. were 100,729 lb., against 88,427 lb. in 1912; to U.S.A., 37,903 lb., against 21,670 lb.; to Germany, 46,127 lb., against 57,694 lb.; to India, 18,472 lb., against 27,481 lb.

CASCARA SAGRADA.—For a parcel of 209 bags, 1912 import, a bid of 30s. is to be submitted, the lot being retired at 38s.

CASCARILLA sold at very high prices, three bales of common small stringy realising 77s., and for two barrels ordinary dusty siftings from 52s. 6d. to 60s. was paid. These prices are due to extreme scarcity.

CASEIN.—A lot of 76 bags sold without reserve for account of whom it may concern at 10l. per ton.

CASSIA FISTULA.—Four bags of good stout West Indian pod sold at 17s. 6d. per cwt.

COCA-LEAVES.—Sixteen bales of fair small yellowish-green Java (Truxillo character) sold at 5d. per lb.; 55 bags fair ground Java were retired at 6½d., a bid of 4½d. being refused.

CROTON-SEED have been tending downwards for some time past, and to-day 27 bags sold at 50s. per cwt. subject, three bags being fair bright and the remaining 24 of ordinary dark quality.

CUTTLE-FISH BONE.—A parcel of 50 bales fair East Indian pale sorts realised 2½d. per lb.

DRAGON'S-BLOOD.—A single case of broken slabs of dull colour sold at 6l. per cwt. Fine reboiled Singapore lump is scarce and badly wanted, orders for several tons being on the market.

ERGOT.—Two bags small sound Russian sold without reserve at 2s. 4d. Privately prices are easy, sellers in primary markets asking for bids.

GENTIAN.—Fourteen bags of fair cut sold at 25s. per cwt.

HONEY.—Although the bulk of the Jamaica sold, prices were barely steady. Good pale yellowish set sold at 37s. 6d.; fair pale set and setting, 36s. to 36s. 6d.; fair brown liquid, 36s.; and dullish to fair brown liquid, 30s. 6d. to 32s. per cwt. Of New Zealand, 12 cases good yellowish set sold at 37s. 6d.; for nice pale set 43s. 6d. was refused, 45s. being wanted; 26 packages Hayti sold at 37s. 6d. for fair set, white, and 31s. to 33s. for ordinary brown set.

IPECACUANHA was fully 6d. dearer. Thirteen bales of Matto Grosso sold at from 7s. 8d. to 7s. 11d. for ordinary dull grey to fair bright, and for mouldy and sea-damaged from 7s. 7d. to 7s. 9d. was paid. For cultivated Minas 7s. 8d. was refused, 8s. being wanted; and Cartagena of fair average quality was retired at 8s.

MENTHOL.—Five cases Kobayashi sold without reserve at from 20s. 1d. to 20s. 3d. per lb., being considered very satisfactory prices.

ORRIS.—Two bags of rather leanish Mogador sold at 47s. 6d. per cwt.

RHUBARB.—Quiet, but steady. Four cases small to medium flat high-dried, with three-quarters fair pinky fracture, sold at 1s. 1d., and a single case of bold round Shensi, with three-quarter good pinky fracture, at 4s. 3d. Medium to bold round horny High-dried was limited at 11d.

SARSAPARILLA.—Steady; 18 bales grey Jamaica sold at from 1s. 8d. to 1s. 10d. for fair to good fibrous, at 1s. 7d. subject for ordinary roughish, and 1s. 4d. to 1s. 6d. for sea-damaged. The large supply of 37 bales Native Jamaica was offered, of which small sales only were made, including good red at 10d. and fair red press packed at 8d. per lb.

The *Thames*, reported on July 22, has brought 16 packages from Jamaica and 14 packages from Panama.

SENNA.—Practically all the Tinnevely leaf offered was of ordinary small yellowish leaf, which sold at from 1*d.* to 1½*d.* per lb., and for dark to fair pods 1*d.* to 1½*d.* was also paid. Of Alexandrian, seven packages sold, including ordinary broken leaf at 6½*d.*, siftings at 2½*d.*, and very broken pods at 4½*d.* per lb.; a further nine bales of pods sold at from 6½*d.* to 1*s.* 2*d.* per lb. Three bales fair bold greenish Tinnevely leaf sold at 2½*d.*

TAMARINDS firm, seven packages dry Montserrat selling at 14*s.* per cwt. subject. Twelve packages fair juicy Barbados were retired at 17*s.* in bond, and a further 29 packages W.I. were strictly limited, in view of the small crop. Privately, East Indian are very scarce on spot, the value being 16*s.*, and to arrive business has been done at 13*s.* c.i.f.

WAX, BEES.—Jamaica was 5*s.* per cwt. dearer as compared with the previous public sale, three barrels of mostly fair brown block selling at 8*l.* 10*s.*, which figure has also been paid during the sale interval. Nine packages of fair yellow to grey Australian sold at from 8*l.* to 8*l.* 2*s.* 6*d.* per cwt., being steady, and 14 bags of Madagascar sold at from 7*l.* 12*s.* 6*d.* to 7*l.* 15*s.* per cwt. for yellow and dark brown block, being full prices; 117 packages Mozambique were bought in.

The late Mr. Dalton.

At the conclusion of his sale to-day, Mr. Andrew Devitt (Messrs. Lewis & Peat) alluded in feeling terms to the loss which the drug trade, the firm of Messrs. Dalton & Young, Mr. John Dalton, and other relatives had sustained by the death of their senior, Mr. Rowland Dalton. He had known Mr. Dalton for forty years, and doubtless he had been associated with the trade for a longer period. He ventured to say that no man in Mincing Lane had made fewer enemies than Mr. Dalton; on the other hand, he had left behind him a large number of friends in business in addition to those at home, to mourn his loss. Mr. Devitt proposed that the drug trade should pass a vote of condolence and sympathy with Mrs. Dalton and the family. Mr. E. A. Webb (Messrs. Evans, Sons, Lescher & Webb), on behalf of the wholesale drug trade, seconded the resolution, adding that he had known Mr. Dalton for a number of years, and that it had always been a pleasure to do business with him. Mr. F. S. Maton, on behalf of Messrs. Dalton & Young, briefly replied, and the resolution was carried *nem. con.*

Cablegram.

NEW YORK, July 23.—Business is dull. Opium is 5*c.* lower at \$5.60 per lb. Domestic quinine has advanced to 21*c.* per oz. Peppermint oil in tins is steady at \$2.90, and spearmint oil is easy at \$4.60. Cascara sagrada is steady at 7½*c.*, and podophyllum root is easier at 6½*c.* Buchu leaves have declined to \$1.38 per lb.

Our Bergen correspondent writes on July 21 that little business is being done in the *cod-liver* oil market; prime non-congealing Lofoten oil is quoted 98*s.* 6*d.* to 100*s.* per barrel c.i.f. The *shellac* market is again dearer, with spot business on a basis of 93*s.* to 93*s.* 6*d.* for fair TN orange; in the delivery market the sales include August at 92*s.* to 94*s.*, October 93*s.* 6*d.* to 96*s.*, and December at 96*s.* to 98*s.* In conjunction with other makers, *Whiffen's* price of quinine has also been advanced to 11½*d.* per oz.; the second-hand market closes to-day (Thursday) at 11*d.* American *turpentine* closes at 28*s.* on the spot, being firmer. In regard to Messina essences, a Palermo advice dated July 19 reports that spot oil continues to be neglected. Holders do not show any hurry to force the sale of what they have on hand, and appear to consider the existing stock as quite small for even limited requirements from now until the new crop. However, lack of demand keeps buyers more and more reserved, and quotations which represent what buyers would be willing to pay, although nominal, are lower to-day than they were a week ago—17*s.* 10½*d.* e.i.f. is quoted. New crop is naturally influenced by the easier feeling and by the regular process of the production. Growers complain of various diseases from which the lemons are suffering. Up to the present, however, weather conditions have been favourable; for January-April shipment 12*s.* is quoted. *Orange* oil is firm and unchanged at 14*s.* 6*d.* c.i.f., and as regards *Bergamot* oil there is no demand from abroad, and business is at a standstill, but holders ask full prices.

Manchester Chemical Market.

July 22.

In regard to general business the holidays in the cotton districts continue to exercise a distinctly quiet tone so far as demand is concerned, and this may be expected to remain for some time to come. Sulphate of copper rules from 7*s.* 6*d.* to 10*s.* per ton lower on the month. White powdered arsenic is also in buyers' favour at about 16*l.* 10*s.* to 17*l.* per ton delivered Manchester. Cream of tartar remains unchanged,

but citric acid continues to advance. There appears to be great uncertainty attaching to the supply of raw material. Quotations for English are around 12½*d.* per lb. Tartaric is quoted 12½*d.* English, and foreign 12½*d.* to 12¾*d.* There is a better feeling reported in glycerin. In heavy chemicals there is scarcely any change to note on the month. Coal-tar products continue on the quiet side. Crude carbolic shows little change, though crystals are lower. Cresylic unchanged. Benzols show little change. For petrol purposes, nines are around 1*s.* 3*d.* to 1*s.* 4*d.* per gal., according to delivery. Sulphate of ammonia is 1*s.* 3*d.* to 2*s.* 6*d.* per ton lower, according to delivery, and may be quoted 12*l.* 10*s.* to 12*l.* 11*s.* 9*d.* per ton f.o.r. Manchester.

Continental Drug and Chemical Markets.

BALSAMS.—Tolu is scarce, with second-hands in Hamburg asking m.7.25 to m.7.40 per kilo. for good quality. Copaiba is quiet, Para offering at m.4.50, Maracaibo at m.4.10, and Brazilian at m.3.90 per kilo.

CONDURANGO is offered in Hamburg at the lower price of m.70 per 100 kilos. for good quality; stocks are plentiful.

IPECACUANHA.—Demand for Rio in Hamburg is at a standstill, and prices have fallen to m.17 per kilo. The last arrivals of Cartagena were taken out of the market at m.16.50 per kilo.

ORRIS.—From Italy very little is being offered at all, the stocks having shrunk considerably; the demand must be covered from second-hands, which to-day is offering sorts not under m.150 per 100 kilos. No result is expected from the new Florentine crop which could influence prices in a downward direction, so that the high values may therefore be regarded as permanent.

QUILLAIA.—Quiet, with cut offering in Hamburg at m.61.50 per 100 kilos.; whole is still kept at the high price of m.57 on spot.

SARSAPARILLA.—The market is without arrivals of Vera Cruz, and stocks are decreasing without any prospect of being replaced. Alrcady m.165 to m.175 per 100 kilos. is quoted, with a rising tendency.

WAX.—*Carnauba* wax is on the whole dull. Consumers are limiting themselves to urgent requirements. Only yellow sorts maintain their prices. The next large arrival in Hamburg is expected at the beginning of August; m.298 to m.300 is quoted for fatty grey and m.307.50 to m.310 per 100 kilos. for current grey.

English Herb Crops.

Messrs. Stafford Allen & Sons, Ltd., report from their farms as follows:

LAVENDER is looking well, and if we get some good spells of sunshine there should be a good supply of oil.

PEPPERMINT has done very well with us this year, and, in spite of the low rainfall for June, the young mint looks very promising, so that, given favourable weather for harvesting, we anticipate a good yield of oil.

CHAMOMILE is just coming into bloom, and should be an average crop.

Dr. B. W. Gathergood's Exor., King's Lynn, writes that he cannot give a very favourable account of the belladonna and henbane crops this year. Henbane is a very thin plant, owing to the very heavy rains in the spring setting the land so hard that all small plants had a difficulty in getting through; but this is growing well now, and promises to be a fair crop. The same also applies to belladonna. All culinary herbs, such as mint, parsley, etc., are a very fair crop.

Holland's Distillery, Market Deeping, write as follows:

PEPPERMINT.—Last season we suffered from excessive rains, which caused the fields to become flooded. We expected a certain amount of damage would be done to the runners, but we did not anticipate such extensive damage as actually happened. Most of the young plants this season, which would have been put out into new land, will be wanted to patch up the bare places caused by the floods, and therefore the acreage will be seriously curtailed. The weather up to the present has not been favourable. We have had periods of excessive heat, and, except for a few spots, have had no rain since May, although in Surrey there has been a heavy downpour during the last few days. The outlook is not good by any means, and should we have some warm showers between now and August and the best harvest weather possible, the prospects for a good yield would not be any better. It is too late to expect any material change. We certainly think that prices will be up to the average, and that a figure about the same as last year will rule.

LAVENDER.—What little lavender we have is very promising. The dry weather suits this plant admirably. We destroyed most of our lavender-bushes four years ago, only keeping sufficient for stock purposes. Now that prices are more remunerative, we shall extend our cultivation from year to year.